

THE ALABAMA MEDICAL JOURNAL

VOL. 20. OCTOBER, 1908. NO. 11

Original Communications.

Some Causes and Evils of Mouth Breathing.

By Dr. W. G. Harrison,

Birmingham, Ala.

The nose comprises two irregularly shaped air spaces, each enclosing three "scroll-like, curved plates of bone"—the latter delicately covered with a mucous membrane, richly supplied with blood vessels, nerves and glands.

To appreciate the importance of the separate factors in producing nasal obstruction, one must recall the unique architecture of the nose and observe how slight an occlusion may seriously derange the natural direction of air currents. If the floor be pushed upward by a narrowed, hard palate—a contracted dental arch, if the roof be depressed by an unrecognized or neglected fracture, if the septum be deflected by injury or thickened by exostoses—if any of these misfortunes arise, then the channel becomes insufficient and more or less occlusion must ensue.

If the turbinates become enlarged, the mucous membrane oedematous, the anterior nares contracted or finally (and this is of greatest frequency and most importance) if the posterior nasal orifice be obstructed by an enlarged Luschka's tonsil—adenoid tissue—in the pharyngeal vault,

*Read before the Medical Association of the State of Alabama April 20, 1908.

then the nose becomes practically incapable of free respiration and mouth breathing must result.

"We are told in Genesis that when God made man it was not into his mouth, but into his nostrils, that he breathed the breath of life." (McKenzie.) Surely the wise Creator intended the nose to serve this happy purpose through all generations.

While nasal obstruction and its attendant dangers were described nearly eighty years ago, its serious import and frequent occurrence has not yet received full recognition. To quote from Osler, "In spite of the thorough ventilation of this subject by specialists, practitioners do not appear to have grasped as yet the full importance of this disease."

"Shut your mouth and save your life" (Catlin) is a hygienic maxim of not less significance than is "Let him refrain his lips from evil" in the domain of moral ethics. Probably because mouth breathing is insidious in its origin and slow in progress, unattended by pain and as a rule begins in children too young to explain the nature of its accompanying discomfort, the general physician is rarely consulted. Should he be consulted 'tis at a time when acute symptoms have abated, and note being prepared for a rhinoscopic examination, the family doctor is prone to overlook the condition.

In children adenoid vegetations in the naso-pharynx are responsible for a large majority of the mouth breathers and no examination is so satisfactory as palpation with the forefinger rapidly passed back in the throat to one side of and then insinuated behind the soft palate. Any man who ever passed his finger in the "bait cup" and felt a congeries of earth worms has but to recall his fishing experience for the sensation imparted by adenoids is strangely suggestive of "dogwood blossoms and fish bait."

To fully comprehend the extent and degree of dangers attending oral respiration we must recall some much neglected facts in nasal physiology.

1. *Olfaction*.—To the average lay mind this alone is the summum totum of the nasal functions. Everyone is aware that the "detection of odors during inspiration may direct us to avoid unpleasant and possibly deleterious objects," but is prone to forget that the "perception of flavors

in expiration" is an essential adjunct to the organ of taste and may also direct attention to the exhalation of foul gases from diseased areas beyond the realm of touch and sight.

In reality the olfactory nerve is distributed to an exceedingly limited area and the function of smell is certainly of secondary import to other purposes served by a healthy nose.

2. *Ventilation*.—Remembering the spheroid cells, filled with warm air, the honey-combed ethmoid with its multiple air chambers, the frontal sinuses and still larger antri of Highmore, the lachrymal canal conveying the saline tears to furnish us a continuous sea breeze, and *above all*, remembering the closely concealed, but most essential eustachian tube to furnish fresh air for the middle ear, I say remembering all these cavities as supplied by the nose, and we must agree that its function as ventilator is all important.

3. *Resonation*.—The most perfect larynx, tongue and nerve connection alone are impotent to furnish the pure, clear, tones when some obstruction robs the voice of its proper sounding board. Without an open nose the voice is muffled—we call it thickened—the m's, b's and n's are slurred and sounded as d's and t's. Adenoids are probably the most prolific cause of stammering—whether due to reflex irritation or direct obstruction we are not informed, but early operation and appropriate training will relieve most cases.

4. *Respiration*.—The above mentioned function of olfaction, ventilation and "resonation" (?) are essential to comfort, but are certainly secondary to the function performed by the nose in normal respiration. The nasal chambers are not merely tubes for conveying air, but by *filtering, moistening* and *warming* the inspired atmosphere they serve a most beneficent purpose.

(a) As a filter. The vibrissae at the nasal orifice filter out the larger particles of dust, carbon, etc., but the millions of microscopic cilia on the cells arrest the finer dust and bacteria and deliver a purified atmosphere to the larynx. Let the nose become obstructed and the unfiltered atmosphere entering through the mouth carries dust, dirt and germs innumerable into the larynx to lodge in the bronchi and alveoli producing foci of irritation—foci of impaired resistive power, entrance points, if you please, for pathogenic agencies.

(b) As an irrigator. Every twenty-four hours the mucous membrane of the nose and accessory sinuses secretes more than a pint of water, and this with the tears maintains the inspired air about two-thirds saturated with moisture—a condition necessary to the normal interchange of gases with the blood in the lungs.

(c) As a thermostat. Lastly the nasal chambers (aided, of course, by the accessory cavities) are wisely provided with a unique blood supply and vaso-motor arrangement by which all inspired air—regardless of external temperature—is rapidly brought to near the body heat before passed on to the larynx. The delicacy and wisdom of this balance must elicit our most grateful awe.

As of other things in nature—when properly understood—we are constrained to pronounce the first verdict of the Creator and say "Behold it is very good."

To fully appreciate the value and comfort of an open nose and to realize the comparative insignificance of olfaction with the other functions, let one plug each nostril with cotton and retain it so for a day and night. Then indeed will the evils of a nasal voice, unventilated accessory cavities and dry, dust laden, unfiltered air become fully understood.

The child with obstructed nose is *less conscious of discomfort* than you *because his condition has crept on him slowly, but the dangers attending his obstruction are tenfold worse than in your case, because his face, chest and mind are not yet developed, and the latter process is seriously impaired by nasal obstructions.* In his earlier years the child requires a large modicum of pure air, and when robbed of this every organ must suffer. Then "the cherub smiles of innocence and health" gives way to "pallid cheeks and flabby face." The lips are no longer "roses o'er washed with dew," but become thickened, protrude, and are "hourly bathed in excoriating nasal discharge and drooling saliva."

Because of passive pressure the papatal arch is narrowed—the nasal floor pushed upward—forcing a deflection in the nasal septum or developing on it some exostosis, and now an erstwhile simple case of adenoids is gradually converted into a deformed, organically narrowed nasal passage, which surgery can help, but can never restore its pristine symmetry.

The irritation or secretion of adenoids, like the much rarer plug of cerumen (when it irritates Arnold's nerve), is an occasional and well concealed cause of coughing (the cough of Bloch). In older children with atrophying adenoids this cough is sometimes exceedingly persistent and annoying. In younger children it produces the frequent paroxysms during the first two hours of sleep.

Adenoid tissue is spongy, secreting large quantities of thick tenacious mucous, which may trickle into and irritate the larynx—laying the foundation of future croup, or (as claimed by many authorities) it may pass into the stomach and prove a prolific source of digestive derangements.

Adenoids, as said before, either by reflex irritation or direct obstruction produce frequent stammering, and to scold, criticise and abuse a child so afflicted is a species of basest cruelty.

Adenoid tissue is frequently absorptive and much valuable experimental work has proven that through this and the faucial tonsils is absorbed the tubercular germs, which are later arrested, incubated and multiplied in the cervical glands—producing the old time “scrofula”—the present day “cervical adenitis.”

Because of the extraneous irritation attending the inspiration of a dust laden, unfiltered atmosphere the faucial tonsils become first irritated, then chronically congested and finally hypertrophied. This further narrows the throat, contracts nature's channel to the lungs and forces the chest to work overtime to obtain even a diminished supply of a very inferior atmosphere.

In extreme cases the haemoglobin falls below forty per cent and the red cells to two million, but both conditions are rapidly restored to normal by this operative interference.

The deformed face, the barrel chest, the impaired memory, the narrowed dental arch, receding chin, protruding upper teeth, shortened upper lip—all these conditions are *improved* by removal of the original exciting adenoids, but the damage already accomplished can not be repaired. An earlier operation would certainly have prevented developmental defects which at this stage we can only check and mitigate.

Another and a rather serious discomfort experienced by patients with moderate adenoids is the proneness to contract cold—a congested hyper-

sensitive schneiderian membrane—a local lowered resistance, if you please. When the corhyza begins the nasal cavities are filled with discharge, drainage and ventilation are defective, putrefaction occurs and incidentally sleep is disturbed by snoring, dysphnoe, night terrors, and not infrequently asthmatic attacks. Such cases too furnish the largest quota of bed-wetters. (Osler.) Like an adherent prepuce, an obstructed nose seems rich in reflexes and is an acknowledged factor in convulsions, enuresis, asthma, chorea, facial habit-spasm, headache, asethenopia and impaired memory. (Jacobi.)

Finally, I must stress the etiologic relationship between adenoids and middle ear diseases. They may produce only a catarrhal condition of the eustachian, or perchance a real occlusion of its inner orifice, and here one sees diminished—impaired hearing. Such a child is often scolded and rebuked for inattention—when in reality his ears are faulty. When the atmosphere is dry or perchance his adenoids temporarily well emptied of excessive secretions his hearing is temporarily perfect to fail again when the adenoid sponge absorbs liquid and becomes swollen. Not infrequently the fermentative process in the pharynx bathes the parts in pus—some of which may be diverted into the eustachian (while the latter is ventilated during the act of swallowing), and thus begins the great majority of acute middle ear suppurations. They may get well if neglected, but a certain per cent will ever recur and finally drift into serious complications or constitute about fifteen per cent of the entrants at the State schools for the deaf.

But probably the most lamentable and certainly the most insidious evil of mouth breathing in children is mental impairment. This is not the rule, of course, but sufficiently frequent to cause serious concern. Such children find it difficult to concentrate the attention (aproxexia), they are often dull, languid, stupid and rarely the condition approaches a real imbecility. While the latter is unusual, still *it can be maintained that no child's mind will reach its highest development* when an obstructed nostril has curtailed its oxygen supply and denied it the due mead of balmy sleep. To children denied these gifts we may well apply the parody employed by Atterbury in derision of Pope, for they certainly have a “*curva mens in corpore curvo.*”

Your essayist is fully conscious that every loyal devotee to science

is prone to magnify his own department—every specialist to exalt the importance of his own services. To escape such probably imputation it seems apropos and not uninteresting to quote rather free extracts from recent authors on practice or diagnosis rather than nose specialists. So I shall purposely omit all the good things along this line given us by philologists and limit the following quotations to writings of the "Internal Medicine Men."

In his excellent work on diagnosis Caille says, "Ear pain and chronic otitis and bed wetting is frequently observed in children with nasal obstruction."

Referring to the putrefactive changes occurring in a nose clogged with adenoids Jacobi says, "Many a meningitis would not exist if there were no adenoids," and again he avers they "Give rise to cerebral congestion, occasional nose bleeding, irritability, cough, parched mouth, thirst, laryngitis, otitis—sometimes facial erysipelas and retard intellectual development."

Referring to the work of Lewin, who demonstrated tubercular infection in five per cent of nearly a thousand adenoids, Holt—than whom the afflicted child has no better nor wiser champion—writes, "It is highly probable that this is the channel of infection in many cases of tubercular meningitis." And again he states, "In my opinion the majority of young children who are subject to spasmodic croup have adenoids and the removal of the latter is frequently followed by complete relief. In these cases marked anaemia is usually present; they are languid, listless, often depressed and this, with deafness, frequently subjects them to the imputation of mental deficiency." Further on he remarks, "Children with adenoid growths contract diphtheria, scarlet fever and tuberculosis more easily than do others, and these attacks, as with whooping cough, are likely to be more severe."

More than a decade ago Loomis appreciated the gravity of mouth breathing as produced by adenoids and after enumerating many of its evils he concludes with this language, "In more than half the cases children suffering from adenoids will be relieved of these symptoms when atrophy at puberty takes place," but "in the meantime," he says, "Such inroads upon the health, hearing, voice and mental faculties have taken place that these can not be overcome in after life,"

Probably no English author has done more than Dr. Osler to expose the dangers of neglected mouth breathing nor more diligently sought to stress the need of its proper correction. Says he, "It is an affection of great importance and may influence in an extraordinary way the mental and bodily development of children." * * * and again describing the course and symptoms he advises, "The lips are thick, the nasal orifices pinched and small and in the mouth the superior dental arch is narrowed and the roof considerably raised." Still further he writes, "The shape of the chest in connection is the commonest cause of chest deformity in this country—constituting the barrel breast, chicken breast, pigeon breast," etc.

Then again "Enuresis is occasionally observed as an associated symptom. Mouth breathers are usually dull, stupid and backward." I made extracts from Rotch, Andees and others, but more would unnecessarily prolong the "seance." Permit me to refer to the most excellent and lucid remarks of Butle in this connection. His warning words are true, pithy and forceful. Every practitioner can afford to read them once a month. But I've already detained you beyond the time allotted. One could quote sufficient to fill a volume.

Like headache, vertigo, cough, pain or diarrhoea, mouth breathing is *not a disease—merely a syndrome*. Unlike these, however, it is *never a trivial matter*. In children it is *always serious* and only because it is insidious and free from pain is it so often overlooked.

Of mouth breathing we can well say, as Dr. Jackson once wrote of rheumatism, "It is a very large box and contains quite a variety of things."

Thomas Carlyle once said, "In Britain there are 40,000,000 people—mostly fools." Captain Catlin would have us believe the chiefest cause of their mental deficiency is due to mouth breathing. His claim is, of course, extravagant, but certainly any degree of mouth breathing is that much of a handicap, and if we would see a child do his best the barrier must be removed and full nasal respiration remain unobstructed.

The old proverb of training children in the way they should go is also negatively true, and we can not too strongly urge that they be guarded against the pitfalls attending nasal obstruction. They are

unable to explain the sensation of a dry mouth, stuffiness, headache and ear pain, but they deserve and must ever receive our best thought and most diligent care. They are "fragile beginnings of a mighty end." That they may develop every part in harmony, symmetry and completeness, let us furnish our best assistance.

Blood Pressure in Disease and Injuries of the Brain.

*By W. H. Wilder, M. D.,
Birmingham, Ala.*

Visiting Surgeon to St. Vincent's Hospital.

Since the discovery of the circulation of the blood by Harvey in the seventeenth century the study of that fluid has demanded more attention than any other in the body. Hales demonstrated the pressure of blood in 1733, but it was about a century later before it began to be measured with any degree of accuracy; Poiseville and Ludwig were pioneers in this line of work; much recent investigation has been made in blood pressure work, especially by French, German and American physicians; among the more prominent of the latter may be mentioned Crile, Cushing, Cook, Briggs, Janeway and others. The last named author says: "There are four (4) factors that determine the blood pressure, viz.: (1) the energy of the heart; (2) the peripheral resistance; (3) the elasticity of the arterial walls; (4) the volume of circulating blood."

If the peripheral resistance and elasticity of the arterial walls remain constant, any increased out-put on the part of the heart will cause an increase in blood pressure, and vice versa.

An increase in the number of heart-beats does not necessarily increase the blood pressure; in fact, a rapid heart is usually considered a weak heart; in order for increased frequency of heart-beats to increase blood pressure there must not only be normal peripheral resistance, but a large amount of blood in the large veins to pass through the heart.

Marey proved that the pulse rate is increased by lowering blood pressure and decreased by raising it; this is evidently due to the action

on the vagus center as was shown by Frank. Other conditions remaining constant, the blood pressure will be increased or decreased by an increase or decrease of peripheral resistance; all arteries and veins contain muscle tissue and possess a certain tonus, which is controlled by the vaso-constrictor and vaso-dilator nerves; the centre of the former is situated in the upper part of the medulla oblongata; the centers of the latter probably exist in the spinal cord. Vaso-motor tone is absolutely necessary for the proper maintenance of the circulation.

If it were not for the elasticity of the arteries the work of the heart would be much greater than it really is; this distensibility varies in different arteries and each one is said to have a co-efficient of elasticity. Grehan and Quinquard found that the carotid of a dog could stand a pressure of twenty times the normal blood pressure without rupturing, and that the lowest pressure at which the human carotid was ruptured was 1.29 m. of mercury or about eighty times ordinary carotid pressure; it can be easily seen from these experiments that a healthy artery will not be torn by an increase of blood pressure possible on the living subject.

The total volume of blood, as compared to the total capacity of the arteries, veins and capillaries is quite small; this is compensated for by the tone of the vessels, and when this tone is abolished the patient is bled into his own veins just as effectually as if he were bled into a bowl. This is the condition that supervenes when a patient dies from traumatic shock from chloroform narcosis.

Tappeiner has shown that on account of peripheral resistance, due to vaso-constriction, one-fifth and sometimes as much as two-fifths of the total blood may be lost, and the blood pressure soon rise to a sufficient height to support life.

All the factors in blood pressure are controlled by the nervous system, except the volume of the circulating blood. In order to eliminate the effects of gravity all measurements should be taken at the level of the heart. The average systolic pressure in healthy young adults will be found to be from 100 to 130 m. m. (12 c. m. Armlet); the diastolic pressure will be from 20 to 40 m. m. lower; in childhood the figures will be less, probably from 85 to 110 m. m. After one has passed middle life the systolic blood pressure generally ranges in healthy people from

135 to 150 m. m. (12 c. m.) Rest, exercise, sleep, drugs, eating, drinking external heat or cold, atmospheric pressure and physical influences may cause great variations in the above figures.

We can no more accurately estimate blood pressure by the sense of touch than we can fever; therefore, to be accurate the sphygmomanometer is as necessary as is the ordinary fever thermometer.

The brain is more dependent upon a proper blood supply and an essential blood pressure than any other organ in the body.

Hill has shown that acute cerebral anaemia will produce the same symptoms as asphyxia: unconsciousness, spasm of respiration, slow heart with increased blood pressure, and finally a cessation of respiration with rapid heart, fall of blood pressure and death.

Janeway says cerebral compression produces the same bulbar symptoms as acute cerebral anaemia; he explains this apparent paradox on the ground that the cranio-vertebral cavity is closed and that the brain is almost or quite incompressible, except the small space occupied by cerebro spinal fluid; and that if any foreign substance be introduced into the cranial cavity, room is made for such substance only at the expense of the neighboring veins and capillaries; local anaemia is therefore produced by the compression, and the symptoms produced are due to the stoppage of the blood flow; the veins will first be narrowed and capillary pressure increased. Kocher calls this the "stage of compensation"; very few symptoms are yet observed; if the pressure be increased a little there will occur a venous stasis with decreased capillary flow; the tension on the brain will equal that of the arterial pressure. Kocher calls this the "initial stage of manifest cerebral compression."

There will now occur headache, dizziness, fainting, vertigo, etc. Cushing has shown that if the compression be over a large area, or general, as when produced by forcing fluid into the cranial cavity, the circulation of the medulla will be markedly affected. the pulse becoming slow, and the arterial pressure increasing on account of vaso-motor stimulation. A still further increase in pressure on the brain will empty the veins and capillaries, and when the pressure exceeds the arterial pressure the circulation in the brain will be cut off. This, in Kocher's nomenclature, is called the "advanced stage of manifest cerebral com-

pression," and is a true cerebral anaemia, causing loss of function of the brain. The vaso-motor centre in the medulla now makes an effort to preserve life and raises the general blood pressure above the tension in the cranium; the blood begins to circulate in the brain again; if the intra cranial tension still is increased the vaso-motor centre renews its effort to preserve life. As the tension in the brain increases the vaso-motor centre responds each time to preserve life until finally, when the intra cranial tension gets too high (300 m. m. or more), or is maintained too long, we get exhaustion or paralysis of the medullary centers, called the "paralytic stage"; the pulse becomes small and rapid, the blood pressure falls and death takes place.

In the American Journal of the Medicinal Sciences, June, 1903, Cushing has reported clinical cases showing the same blood pressure reactions, and symptoms, as had been previously demonstrated only experimentally on animals, thus throwing a good deal of light on this subject, especially as to whether or not to interfere surgically in certain cases of cerebral compression.

Most pathologists believe that arterial wall changes affect different portions of the vascular system in different ways, and that some people with quite extensive general arterio-sclerosis may live to a ripe old age without a cerebral hemorrhage, while others with little disease elsewhere die comparatively early with apoplexy; the hypertension reading of the sphygmomanometer alone does not necessarily indicate positive evidences of approaching apoplexy, but when taken in conjunction with other signs and symptoms, puts us on guard as to its causative factors in the heart, arteries or kidneys.

Large cerebral hemorrhages, whether apoplectic or traumatic usually cause marked hypertension (300 m. m. to 350 m. m.) and are always accompanied by symptoms of general compression, such as slow, full pulse, coma, stertorous breathing, paralysis, etc.

Cook and Briggs and Cushing think that in such cases blood pressure records should be taken at frequent intervals, and if it be found to be high and rising, or varying rapidly, there is indication that the hemorrhage is increasing and that the circulation in the medulla is failing, and they advise surgical intervention to remove the clot, whether it be apoplectic or traumatic in origin. In fact Cushing reports two

operations for removal of apoplectic clots, with temporary relief of symptoms, but with fatal results. He believes that surgical interference is probably the best mode of treatment in certain well selected cases of apoplexy, and closes his remarks on this subject by saying: "In dismissing these cases of apoplexy, representing as they do extreme types of the advanced stages of compression, it may be said that despite the ultimate failure of recovery in these two unfavorable cases, the temporary amelioration of the severe symptoms is a sufficient justification for future attempts to afford surgical relief to certain carefully selected cases of cerebral hemorrhage." Later he reports a case of recovery from the removal of a subcortical hemorrhage caused by a stab wound of the cranial vault, and also one for removal of clot in apoplexy. Hemorrhage into the anterior cranial fossa will show less effect on general blood pressure than into the posterior fossa; it is usually very marked in cerebellar hemorrhage, and also where the pressure is on the medulla.

The sphygmomanometer will aid us greatly in differentiating between apoplectic coma and alcoholic coma; in the former there is usually marked hypertension while in the latter the blood pressure is usually lowered. The difference between uraemic coma and apoplectic coma is not generally so easily told, as both show increased blood pressure. In cerebral thrombosis and embolism the tension is usually normal or only slightly elevated, especially if taken early. In opium coma the tension is high at first, but just before death there is a vaso-motor paralysis with very distinct hypertension. In cerebral tumors there is generally no change in blood pressure except where the tumors are of very rapid growth, when they cause hypertension, especially when located in the posterior portion of the brain. General paresis, aside from the Bright's disease, which so frequently accompanies it, does not cause increased blood tension.

Excitement being undoubtedly the most powerful cause of increased blood pressure, we usually find a marked hypertension in neuropathic persons, and especially is this marked in pain or during convulsions.

In head injuries with traumatism of the brain systematic blood pressure readings should be taken at frequent intervals, and if the blood pressure is high, or increasing, or if there is great and rapid variations

in blood pressure, this, in connection with other symptoms, calls for an early operation, which in the first two stages of cerebral compression, and frequently even in the third stage, but rarely in the fourth stage, proves successful and saves life. Kocher regards the slow high tension pulse, with other marked symptoms of advanced compression, as evidence that the most favorable time for operation has passed. Usually soon after the accident there are focal symptoms of local blood pressure that will indicate the proper site for opening the skull; where the compression is general from wide spread hemorrhage, with no localized symptoms, the intra-cranial pressure should be relieved by large osteoplastic flaps from one or both hemispheres, and also opening into the dura matu if necessary. The sphygmomanometer is often of great aid in differentiating between compression and concussion of the brain; in the former condition there is usually hypertension of a marked degree, except in the paralytic or last stage when the blood pressure will be quite low.

In concussion the blood pressure will usually be low from the beginning, there will generally be other symptoms of shock, and the indications are for means to increase blood pressure, such as transfusion and artificial respiration if necessary. Adrenalin and other vaso-motor stimulation should be used. In some cases of concussion there will be a late rise of blood pressure, and in these doubtful cases, unless otherwise contra-indicated, the intra-cranial tension should be relieved by surgical intervention.

Sir Victor Horsley has called attention to the early respiratory failure in these cases and emphasized this fact that they "die from failure of respiration, and not, as is so often surmised, from failure of the heart." He reports a case in which there was respiratory failure on the operating table; artificial respiration was resorted to, the skull was opened rapidly, the brain bulged out, the pressure was relieved, good circulation was re-established in the medulla, the respirations soon became normal, and the patient recovered.

Treatment of Gonorrhea in Women.*

By A. G. Douglass, M. D.,

Birmingham, Ala.

The germ life I am sought, this evening, to "teach" you to destroy, has a birthright as ancient and aristocratic as that which attaches to any man, for it dates as far to the rear as the memory of man runneth not to the contrary. History, both biblical and scientific, tells us that its creation was co-incidental with ours, and we know it has preserved its identity and vastly multiplied in force and numbers, it must be co-equal with us in importance. Its tenacity of life is marvelous. Adam and Eve were, of necessity, its first hosts. Then, again, when the possibilities of perpetuating its life were narrowed to a few possible hosts, we find it bobbing up serenely in one or more of the occupants of Noah's ark (after the flood) who had it secreted about his or her "person." Since this bit of history, is it not natural to observe that we have a very formidable enemy to deal with.

Human alkaline fluids are its natural pabulum; cylindrical epithelium its habitat, and the sexual organs of man and woman the geographical divisions of the body the germs usually select, though they often take on a spirit of migration, and float around in the blood stream, and find anchorage in the generative organs and large joints and serous cavities.

In mapping out therapeutic measures we first think of prophylaxis. We have said that at least one human occupant of the ark must have harbored some of these germs, and there being only eight persons present, one in eight must be our ratio of calculation. Many thousand pages have been written, and hundreds of laws enacted in different countries for the regulation of prostitution, but statistics fail to show that it has been diminished in the least; rather, as the years go by, more widely is the germ disseminated. But it is with the clandestine class that we are most concerned, for it is through this channel that both sexes more frequently contract the disease. Owing to the peculiar conditions of the meeting, no precaution is taken to prevent contagion.

*Read before Jefferson County Medical Society, Aug. 31, 1908.

So I will not discuss the part the regular prostitute takes in perpetuating this disease.

Every person who has gonorrhea must have the germ conveyed to him from some other person, usually of the opposite sex, and through the normal act of copulation. This being a fact, we should instruct the youth of the land that cleanliness is the surest preventive measure. If we can keep the men from contracting the disease, no women will ever have it, and vice versa. Could we keep up this chain of care for a number of years, this disease would soon disappear from the face of the earth, for it is my opinion that if men were at all time sober and careful to thoroughly cleanse the parts after each contact, a very small number would become infected. Not so with women. Not even when every precaution is taken, antiseptic douching, etc. We are taught that during the act the cervix dilates, contracts and retracts, and the penis being in intermittent contact with the cervix during the expulsion of the semen, we necessarily have much of this fluid (mixed with gonococci) forced into the cervical canal, and when the orgasm is complete and final contraction takes place, these germs are imprisoned in the canal where the douche fluid does not reach it. This fact explains the criminal, rather the unwise and dangerous procedure women take to prevent conception by douching after cohabitation.

So there is no "royal road" to prevention, with women. What then? We must be absolutely certain that no gonococci enters the portal of woman's vagina, and to be sure of this we must be sure that men have none when they come in contact with women. This, gentlemen, is a sacred obligation we are called upon to meet—to be unerringly certain that every patient who consults us is entirely free from disease when we sanction his return to family duty, or the marriage altar.

But I am here to outline to you a management of the disease when it is in flower. These women all excite within me a decided interest, and solicitation when she is a married woman, for no man can tell what degree of undoing will result to her, ere the germs are annihilated. Gonorrhea in women presents more complex conditions than in men (popular opinion to the contrary), for it is not until recently that it has challenged the attention of surgeons with the same seriousness it does today. We recognize the fact that it produces more in-

valids than all other surgical causes combined. A dozen years ago we had not arrived at the gloomy aspect of the disease we now entertain.

I am expected to pursue the germ only as far as the interior of the uterus. We are all familiar with the gross symptoms of gonorrhea in women and young girls. When I first see a virulent case, I instruct the patient as to personal sanitation—how to prevent possible infection of others and of other parts of her own body. All cloths, cotton, etc., used about the patient should be burned, and all appliances sterilized. Urethritis is usually the first and most discomforting symptom. I give first a calomel purge, then alkaline and urinary antiseptics, acetate potash, ol gaultheria, and belladonna and opium. Hot bi-chloride douches night and morning, with vulval pads of lead water and laudanum in the interim. This treatment, sometimes varied, is kept up, usually, for ten days. Then I begin the use of nitrate of silver, applied locally, at my office, in varying strengths, every second or third day. This treatment is best administered by using the endoscopic tube for the urethra, and large cylindrical speculum with a long handle for the vagina. All secretion is first removed by cotton swab, and the medicament applied to every part of both canals as the instrument is withdrawn. The silver nitrate is increased in strength as the case progresses to a cure, and used less often. By the twentieth day the discharge is greatly diminished and the patient comfortable.

If the bladder has become involved, I irrigate it with the silver solution, but much weaker. Under this procedure many of my patients completely recover in from four to six weeks. But in some I have so-called complications—Bartholin or Skeens glands become involved and lead to suppuration. These must be freely incised and swabbed out with carbolic acid. The dry method endorsed by many, I do not employ—that is, packing the vagina with gauze impregnated with various remedies. In this procedure we subject the patient to unnecessary pain and discomfort with the additional hazard of damming the pus and gonococci back into the cervical canal, which may have, until then, escaped infection, though that locality may be primarily involved.

Many writers now contend that the vagina is seldom involved in mature women. This is not my observation, for evidences of vaginitis, pain, tenderness, and free pus discharge accompanying the urethral

symptoms are the first manifestations, and this is my reason for not packing and otherwise manipulating the inflamed structures. The vault of the vagina harbors the germs longer than any other part of the canal, and takes on a chronic granular condition, which must be curetted or cauterized with carbolic acid. Now, if we press the urethral canal from within outward, we will find a drop of pus exuding, which comes from the ducts of Skene's glands, situated just within, and on both sides of the meatus. These must be dilated, slit up and cauterized with carbolic acid.

We now come to a more difficult field for observation and therefore more difficult to manage—the uterine mucosa. Although the microscope does not always reveal the presence of the "Neiser" diplococcus, my opinion is that it is the causative factor in a big majority of the suppurating conditions of uterine mucosa and granular troubles of the os uteri. Could we get easily in contact with the uterine canal, our treatment would be the same as for the other cavities, but owing to the smallness of the canal, we are forced to pursue a different course. There is a diversity of opinion as to getting remedies in contact with the diseased surfaces, and whether, and at what stage dilatation and curettment, should be adopted, if at all. In the treatment of this disease in men I have learned that gonococci do not attack freshly incised or denuded tissue, and no case has been aggravated by incising strictures, when the urethra was suppurating freely. In consequence, I do not now hesitate to freely dilate the canal at an early stage, and later curette away all the diseased tissue. It is the dilatation which begets the good results, and quickest cures—for drainage is our object. We can tell the diseased from the healthy tissue by the sensation conveyed to the hand by the curette. Normal tissue has a rough grating feel, and inflamed and granular tissue has a soft, boggy sensation. After thorough curettement, I apply strong carbolic acid, and do not pack for the same reason that I do not pack the vagina—fear of driving the pus out of the uterus into the fallopian tubes and thereby increasing the irritation in the inflamed mucosa. After the curettement, I apply either strong silver solution or tincture of iodine with a uterine syringe, every third day. Swabbing is not applicable to these parts, for we do more harm than good in interfering with nature's efforts.

I find the measures outlined herein to have given me the most gratifying results, with the fewest number of failures. I have not had very favorable results from the newer silver salts. Nor have I "experimented" with serum, vaccination, or substitution of the pathologic vaginal discharge with healthy mucous from a normal vagina. I am waiting for more encouraging reports from hospital experiments in competent and honest hands, and not faking my patients with the delusion that I am benefiting them, and dishonestly taking their money.

809 Brown-Marx.

Personal Impressions of a Visitor to the International Congress on Tuberculosis.

By C. B. Jackson, M. D.,

Dora, Ala.

It was a great exhibition, and I think it a pity that every man, woman and child over ten years of age in the whole country could not have seen it, on account of its immense value as an educator on the all important and absorbing question of tuberculosis.

On account of the crowded condition it was difficult to hear many of the papers and discussions. Besides, the seven sections of the congress were all at work at the same time, so one could hear but few of the papers. Many of the papers and lectures were of interest chiefly to scientific investigators. The best authorities from all parts of the world are agreed upon the main points in the prevention and cure of tuberculosis. There is a difference of opinion among scientists as to the identity of bovine tuberculosis with human tuberculosis and the communicability of bovine tuberculosis to man. The great majority, however, believe that the disease may be transmitted from animals to man. And it is the part of wisdom to hold to the latter view, unless Dr. Koch or some other scientific investigator, can prove beyond the shadow of a doubt the contrary view.

The average physician derived vastly more benefit from the exhibits than he did from the papers and discussions. From an examination of the statistics I was impressed with the enormous loss of life and the economic loss from tuberculosis. The New York health department

estimate that 1,500,000 die in the world annually from tuberculosis, 180,000 in the United States and 16,500 in the State of New York. From the imperfect statistics in the United States census bureau it is estimated that one person dies from tuberculosis in the United States every two minutes and thirty-six seconds, twenty-three every hour, 248 every day and 200 000 every year.

If we figure human lives cheap and calculate the cost of caring for the sick and the loss from the earnings of all these thousands the economic loss will mount up into hundreds of millions annually. To a superficial observer it might appear from these figures that the race would become extinct in a few centuries, but the charts of the New York health department show a gradual decline of the death rate from this disease. Many of the great men in the medical profession favor a national health department, with a doctor at the head of it, and federal aid in combatting tuberculosis. I was impressed with the great importance of rigid investigation of prisons, workshops, factories, schools, dormitories, etc. In schools with dormitories over-crowding should be avoided and any student with any suspicion of tuberculosis should room alone. Not only should the sleeping apartments be inspected, but the quality of the food also. The use of individual drinking cups should be enforced in all schools, and the public drinking cup abolished in all places. I saw on exhibition at the congress a machine whereby paper cups, manufactured under aseptic precautions, were dispensed filled with pure water. This, I think, is the solution of the question of public or common drinking cups. These machines can be easily installed in schools, railroad depots, trains, etc. Velvet upholstery in railroad coaches and sleeping cars should be condemned and replaced with leather. Coaches and sleepers should be fumigated after each trip. We should not only have our meat and dairy products inspected, but dairy men, meat packers, market men and venders of fruits and vegetables should be examined.

In our mining camps where tuberculous subjects are allowed to move from house to house and no attention is paid to the matter of disinfection, thereby making the camp a hot-bed of tuberculosis, we should wage a campaign of education, and enlist the help of the superintendents in bringing about the needed reforms. The work of this con-

gress will carry light and hope to many a dark and saddened heart throughout this country, when made to realize that there is hope of recovery even for a consumptive.

The Southern States are doing very little to stamp out the disease. The Northern and Eastern States are doing a great work and spending a great deal of money. The State of Pennsylvania in 1907 appropriated \$1,147,000 with which to fight tuberculosis. They are establishing numerous sanatoria for the treatment of the disease. In places they are establishing camps for those who are not able to go to a sanatorium—day camps where the patients may go and rest in the open air all day and have proper food. Away from the crowded tenement quarters of the cities—night camps, for a class who are able to do some work and feel that they are obliged to work to support a dependent family, where after the day's work they may go and sleep in the pure open air instead of in the unsanitary district where they make their homes. The promoters of these camps claim that they are accomplishing good with them.

I trust our Southern States will catch the inspiration from the North and East and join in the warfare against the white plague.

Medical Treatment of Gall Stones.*

By H. E. Mitchel, M. D.,

Birmingham, Ala.

The medical treatment of gall stones is a very difficult and unsatisfactory thing as a rule. Yet we occasionally meet with it and from one cause and another have to treat them. There is nothing in the whole list of diseases of so much importance, that there is so little said about in the books; in fact, comparatively speaking, there is almost nothing. I have failed to find any specifics, so will say a little of prophylaxis or preventive medicine and treatment; as this, to my mind, is of more importance to the patient than the treatment of gall stones.

To prevent their formation we have several things to consider, in the first place diet might be considered. In this all agree that fats, sweets and rich foods of any kind should be prohibited, as well as malt liquors.

*Read before the Jefferson County Medical Society.

Tight clothing and corsets should be forbidden. Suspend the clothing from the shoulders.

If other diseases exist, especially those of the uterus, they should be corrected. Make the bile flow freely through the ducts by the free use of water, especially at night. Hare thinks Carlsbad-sprudel salts in water, vichy or saratoga salts. Phosphate sodium salyc. sod. or some other purgatives are necessary. The springs themselves are preferred if your patient can get to them, of which the springs of Carlsbad or Vichy abroad and the Saratoga or Bedford of this country are the best. Dr. Dedman told us last year of some springs in Tennessee, I think they are called Red Boiling Springs. Others have mentioned them as being good.

Strumpell thinks the journey to the springs and the promenades exert the patient and are often a drawback. He recommends absolute rest, either in bed or lying on a sofa with easy clothing, with cautions and nourishing diet and the administration of the salts at home.

There is no doubt that the salts from the different springs exert some influence on them in some way, whether by absorption (which is very doubtful), by making the bile more watery or by keeping the secretions flowing more freely is a matter, in my opinion, of conviction on the part of the physician.

Now as to the medicinal treatment, there has been a great many remedies recommended, and we have had some lauded very high, only to be thoroughly tried and exploded. When the stones are passing we have to relieve the pain and collapse, vomiting is a very common and annoying symptom, as well as jaundice; these have to be relieved as they arise. For the pain, hot applications, such as poltices, hot cloths, hot water bag and mustard plasters. A general hot bath long continued might relieve by relaxation. Sometimes the ice bag is well borne and gives relief. Opiates certainly comes first in almost all cases. Morphine and atropia by hypodermic injection is the best and most common one used, this to be repeated as often as is necessary. Some claim a great deal for bellahonna, and Ringer says that gelsemium often repeated is very beneficial. Olive oil had a high place in treatment for a long time, and some still claim something for it. Forchheimer says: To say that it acts as a solvent is just as absurd as to deny its value in some instances; how it acts he says no one knows. I have used chloroform by inhalation as well as internally, where the stomach will bear it, and seemingly

had good effect. The vomiting is best controlled with crushed ice, cocain or opium. For the itching Osler says, McCall-Anderson's dusting powders is good. They are composed, starch 1oz., camphor 1 1-2 3 and oxide zinc 1-2 oz., to be dusted over the skin with a powder puff. He says, as many others, that nothing will dissolve the stone. He also says that a local application of ichthyol and lanolin ointment sometimes gives relief.

Wampole & Company are making a tablet or pill of sodium succinate salyc. and glycolate, which they claim quite a great deal for. Their man told me that they would reduce the surgical cases to 2 per cent., which statement I took with a grain of salt and would advise you to take it the same way. I have never used them. At Johns Hopkins Hospital they are using urotropine in large doses; 60 to 70 grains per diem as a gall bladder disinfectant in typhoid fever, which perhaps may reduce the number of cases of gall stone in the future.

Some good men think to inject olive oil directly into the gall bladder will dissolve the stone, others are afraid of it. The treatment between the attacks should be directed largely to the diet. Krauss recommends for breakfast tea or coffee with little milk, little if any sugar, rusk or toast, soft boiled eggs, fish or cold meats; midday meal, fish (but no salmon or eel), roasted meats, vegetables boiled, potatoes, stewed fruits without sugar, red wine, water or weak whisky; evening meal, Meat, fresh roasted, tea, wine or whisky in small quantities and little bread. He is about the only one that allows whisky at all. In fact, I believe all I have read after forbid it entirely. In looking over his statistics I find that more than 50 per cent. of his patients were doctors, lawyers, officials, bankers, clergymen and military officers; this perhaps will account for his allowing whisky, for he knew they would take it anyway. Personally, when conditions will permit, I heartily agree with Riedel, that a single unsuccessful inflammation of the gall bladder is sufficient indication for an immediate operation, for I don't think anything medicinal is curative, and this is one thing that to delay might prove very dangerous and we might lose some very valuable time and perhaps a patient. However, I know it is often very difficult to get the consent of our patients to submit to the knife from the first attack.

The Diagnosis and Medical Treatment of Gastric Ulcer.*

By James Edwin Dedman, A. B., M. D.,

Birmingham, Ala.

To the internist and the surgeon alike, no subject in recent years has perhaps been of more interest and the cause of as much discussion as that of gastric ulcer, in fact, each has vied with the other in claiming it for his own particular field, while the patient-victim has been a veritable tennis ball tossed ruthlessly between the two.

Unquestionably the diagnosis of gastric ulcer is fairly easy if the classic symptom-triad is present, viz.:

1. Haematemesis, which one must definitely ascribe to the stomach.
2. Sharply localized pain occurring at regular intervals after the ingestion of food.
3. Increase of free hydrochloric acid in the gastric contents.

However, the difficulty, and I might add the *danger* here encountered is that this triad would only appear after the ulcerative process has made considerable inroads upon the gastric mucous membrane.

The consummation to be desired in order to obtain better results is that a diagnosis should be made before haemorrhage at least takes place.

Cheney¹ insists that there is an early stage of gastric ulcer lasting for weeks or months, during which rigid medical treatment can easily accomplish a cure, but that the clinical picture of this stage does not in any way correspond to the classical one presented in text books, and that in this stage the diagnosis must be inferred rather than demonstrated positively. Continuing, he says: "In the later stage commonly described as gastric ulcer, the symptoms are really due to complications rather than to the original disease, viz.. (a) perigastric adhesions, (b) pyloric stenosis, (c) gastric dilatation and retention, (d) localized peritonitis, (e) opening of a large blood vessel, (f) perforation of the stomach wall—complications that lie beyond the realm of medical treatment, and have crossed the border line into the surgeon's domain."

Statistics of various observers and of hospitals are at great variance as to the frequency of peptic ulcer, as well as to the equation of sex

*Read before the Alabama State Medical Association at Montgomery, April 21, 1908.

and age, and the effect of occupation. These statistics are more uniform concerning the location of the ulcer in the stomach wall. Chas. D. Aaron² makes the startling statement that "when we take into consideration the fact that one-half of all post-mortem examinations show that the stomach has had an ulcer at one time or another, we must conclude that ulcer of the stomach is quite a common affection." Rodman³ makes the statement that in a city of 1,000,000 inhabitants, fifty thousand (5 per cent.) will suffer from gastric ulcer. Musser⁴ in an exhaustive and valuable contribution to this subject reports the statistics of 13 observers, in fact a collaboration of statistics showing that at 118,317 autopsies performed (this country and abroad) deaths from sundry causes, there were evidences of ulcer present or past in 4,457 cases, a percentage of 1.6. The highest percentage, 5 per cent., was reported by Welch—German statistics, while the lowest, 0.13, was that of the German Hospital (A. O. J. Kelly). From a clinical standpoint, Howard⁵ has collected some statistics which show quite a different percentage in several cities, for instance: the percentage of cases in Boston is 1.28, while in Denver it is only 0.12. The statistics of the Massachusetts General Hospital—as given by Greenough & Joslin, show a percentage of 1.74. "It is of interest to note (Musser⁴) that in Breslau and Zurich 0.66 per cent., London 0.78 per cent, Berlin 1.33 per cent., Edinburgh 2.2 per cent., are fair estimates of the clinical frequency of gastric ulcer."

Gastric ulcer is rare in childhood and old age, and unquestionably the majority of cases occur in the third decade of life (20 to 30), and four-fifths of all cases occur in persons between the ages of 20 and 40. It would seem from the literature that males with gastric ulcer die most usually after 30 years of age, of haemorrhage, while females die before 30 of perforation and peritonitis. As to the relative frequency of the disease in the sexes—while it was formerly supposed that it occurred in women twice as often as in men, this conclusion has been proven an erroneous one in the light of later observation. Joslin gave the ratio as 5 to 1, Rheinwald as 1.2: 1, and Murrell in (3114 cases) 2.1: 1. If the absolutely demonstrated cases are counted, the frequency in the sexes will be about equal. The statistics of the Mayos and of Moynihan confirm this, and show that there are perhaps a few more gastric ulcers in females, and more duodenal ulcers in males, but that as a whole,

duodenal ulcers are nearly as frequent as gastric ulcers. However, D'Arcy Power⁶ in an article entitled "Some Misleading Abdominal Cases" says: "Duodenal ulceration is a constant source of mistake and the condition is not very common."

The question of occupation seems to have very little bearing upon the subject; however, such occupations as shoemaking, washing, tailoring, and those in which men use tools that press against the chest, such as breast drills, have been mentioned as being contributory causes of gastric ulcer.

As to the location on the gastric wall, McNevin & Herrick⁷ report 97 cases located as follows:

Lesser Curvature	47 or 48 per cent.
Posterior Wall	30 or 31 per cent.
Anterior Wall	17 or 17 per cent.
Greater Curvature	3 or 3 per cent.

W. J. Mayo⁸ divides the stomach into two parts—a pyloric or grinding portion lying to the right of a line drawn vertically from the right of the cardiac orifice, and a cardiac part to the left of this line. In the pyloric portion were 94.3 per cent of the ulcers in McNevin & Herrick's cases, and 5.7 per cent. in the cardiac portion, and 73.3 per cent. were on the lesser curvature-posterior surface.

The subjective symptoms of gastric ulcer may run the entire gamut of complaints that arise from any stomach trouble, symptoms incident to a slight gastritis or those incident to a severe inflammatory condition.

Perhaps one of the first symptoms most usually noted by the patient is gastralgia appearing from one-half hour to three hours after eating. A man noting this would soon find that he was more comfortable when his trouser belt was loosened—and for the same reason a woman would probably let out a few laces in her corset. The pain may be caused by the eroding process on the sensory nerve filaments, or may be from the mere presence of particles of food in the ulcerated surface, or to the presence of an excessive amount of free hydrochloric acid. It may be a pyloro-spasm produced by ingesta lodging in the ulcerated sulcus and the muscular effort on the part of the stomach to eject it.

The pain may be thermic, caused by the ingestion of hot or cold fluids. or chemic, as from irritating drugs, or foods. Anything which

tends to increase the motility of the stomach may correspondingly increase the pain. If pain does not occur within three hours after the ingestion of food, a duodenal ulcer may be suspected. Posture may influence the time of the appearance, and the character and duration of the pain.

The pain may vary from a mere sense of fullness or discomfort to severe lancinating pains that simulate angina pectoris. The pain is distinctly aggravated by a large amount of food, especially that which is coarse or solid.

The pain is most usually in the epigastrium, but may extend down as low as the umbilicus, up to the thorax, backward, generally to the left of the spine and between the 7th and 12th dorsal vertebrae. It is a very important diagnostic point that the tenderness of the stomach corresponds to the seat of pain after eating and that the situation of the tenderness rarely varies during the entire course of the malady. Pressure upon the epigastrium increases the pain. Two things may be said to be characteristic as to the pain of gastric ulcer differentiated from all the various kinds of pain accompanying other gastric disorders, and these are the localization of the pain each time in the same spot, and the relation of the pain to the ingestion of food.

Vomiting usually occurs in gastric ulcer, but in many cases it is absent. Cantlie⁹ found it present in 79 out of 85 cases. There may be merely nausea and flatulence or the patient may not vomit except at intervals of a week or so. Vomiting may occur just after eating, but most usually is from two to three hours afterwards, and the pain is nearly always relieved by it. The vomitus consists of partly digested food and is usually very acid in reaction.

If the vomitus contains blood, or if it consists entirely of blood, this is of much diagnostic value, and if the pain has been present prior to this, the symptom-picture is quite characteristic.

From a careful perusal of the literature I gather that haematemesis occurs in at least 50 per cent. of all cases. Where haematemesis occurs we must take into consideration when weighing up a diagnosis, that haemorrhage may be from other causes, such as epistaxis, mitral stenosis, cirrhosis of the liver, splenic anaemia, leukaemia, uraemia, tabes dorsalis, and varicose veins of the oesophagus or gastric mucous

membrane. If the patient tells us that he has vomited blood and we have not seen it, we must consider the question of the possible ingestion of wine, coffee, some form of iron, fruit juices, etc. The blood is usually dark on account of the haemoglobin being changed to haemetin by the hydrochloric acid, and if it has remained in the stomach long before being expelled, it oftentimes resembles coffee grounds. The matter vomited is acid and is not foamy—frequently it is of a bright red color as in a case I recently saw, in which the haemorrhage came near being fatal. These patients rapidly get pale, cold and suffer from shock.

In nearly all these cases where haematemesis occurs, we may find "occult blood" in the stools for several days after the haemorrhage. For testing this, Teichman's test for haemin crystal formation is not reliable and I prefer Weber's test, which is made as follows: Rub up a little of the faeces with water to which has been added 1-3 volume of glacial acetic acid. Shake out with ether and when this clears up, take a few c. c. of the ethereal extract and treat it with 10 gtt. of tincture of gusiacum and from 20 to 30 drops of turpentine. A blue violet color will result if blood is present. If blood is persistent in the stools (melena) and there is not much vomited, a duodenal ulcer should be suspected. If no haemorrhage occurs for some time, the patient will rapidly recuperate his strength; in these cases many marvelous recoveries are reported—in 3 or 4 weeks the haemoglobin going from 30 to 40 up to 50 or 60, and the red blood corpuscles going from 1,000,000 up to 3,000,000. There may be several haemorrhages in a day, or perhaps one or two a week, all of them of course coming from the same eroded vessel.

If haemorrhage is profuse there may follow extreme anaemia, manifesting itself in a waxy pallor of the skin, great emaciation, a small wiry and rapid pulse, slight elevation of temperature, tinnitus aurium, vertigo, faintness on the slightest exertion, and perhaps a slight transitory delirium and perhaps amaurosis—the latter generally occurring immediately after the haemorrhage. Oftentimes the very first intimation of the existence of a gastric ulcer is a profuse haemorrhage, which may end fatally, but happily such an outcome is quite rare, most of these patients rapidly recovering their strength, and either go under proper

treatment to a good recovery or succumb to a subsequent haemorrhage, perforation or some other complication.

Statistics as to death from ulcer are like most other statistics on this subject—at great variance. Rodman⁸ gives his as high as 8 per cent. while Branwell¹⁰ gives his as low as 0.8. Ewald²⁸ basing his statistics on 360 cases finds haemorrhage lethal in 1.2 per centum.

Riegel's dictum infallible that all cases of gastric ulcer are accompanied by hyperchlorhydria is now known not to be true. Unquestionably a large percentage of cases are accompanied by hyperacidity, but there are many cases in the literature in which a normal or subacidity was present, especially in those cases accompanied by a chronic gastritis. In the majority of cases of gastric ulcer if the stomach contents are examined when fasting we will find a considerable amount of hydrochloric acid, and if we examine the contents an hour after an Ewald test meal of tea and toast we will find an extreme amount of acid. We must not overlook the fact that hyperchlor hydria is very frequent in neurasthenics, and even in robust individuals it may be caused by grief, worry or severe mental taxation. Chace¹ makes an interesting statement anent this, that during the sometime recent massacre of Jews in Russia, many Jews who lived in New York and had relatives in Russia, came to the infirmary suffering with hyperacidity. The total acidity of the gastric contents is due to free hcl. to hcl. combined with the proteids, to acid salts and often to acids of fermentation such as lactic and butyric. Combined acid is hcl. which has united with proteids in the process of digestion. Free hcl. is that which is secreted in excess of what is needed. The normal total acidity is from 45 to 60, combined from 10 to 15, free from 15 to 25. If the ulcer has led to a stenosis of the pylorus, and hence to an excessive stagnation of the gastric contents, there may be a temporary subacidity or anacidity.

J. Dutton Steele¹² in an excellent article states that hyperacidity can not produce irritation unless there is a sensitive mucous membrane. He tries to avoid the use of the terms—hyperacidity—normal acidity and subacidity, saying instead—"acidities of the upper, middle and lower grades. The upper grade being all over 60 (total acidity), the middle 30 to 60, and the lower grade under 30. As to the various methods to

determine total acidity, free hydrochloric, etc., it is beyond the scope of this paper to discuss—but for the qualitative test of hydrochloric acid I wish to give one I have recently used as being superior to all others.³²

A pinch of pure, dried, pulverized resin of guaiac is dissolved in 5 c. c. of the following mixture:

Spiritus aetheris nitrosi	10
Alcoholis	40

The solution of guaiac must be freshly prepared for each series of experiments; 5 c. c. of filtered gastric contents are placed in a warmed test tube, and the guaiac solution is superimposed. At the point of contact of the two layers the precipitated guaiac forms a grayish-white ring, which is soon colored blue in the presence of free hydrochloric acid. If there is only a trace of acid, the color is green. Lactic acid in solution of 1.25 per cent. or over will also produce a positive reaction, but this high concentration is never obtained in the stomach. A coloration of the ring may, therefore, be taken as a positive indication of the presence of free hydrochloric acid. This reaction is even more delicate than Gunzburg's test.

Single or multiple gastric ulcers not presenting the usual aspects of peptic ulcers may occur as the result of tubercular or syphilitic infection, neither of which fortunately is very common; the diagnosis is exceedingly difficult and is not usually made except at postmortem (Stewart³³).

Nearly every case of gastric ulcer is accompanied by quite an obstinate constipation, the tongue however is seldom coated, being usually smooth and of normal color. Often there are acid eructations and the patient will state that he spits up matter that is as sour as a lemon. Pyrosis is a frequent symptom, occurring most usually from a half hour to three hours after eating. The appetite is but slightly impaired, if any, and until haemorrhage occurs, or the patient begins to restrict his diet on account of the pain caused by a full diet, there may be no loss of flesh. In some cases even in which there is no vomiting or haemorrhage, there is a gradual loss of weight and considerable anaemia, as evidenced by red blood count that may sometimes show less than 1,000,000 to the C. M. The anaemia, or chlorosis may precede other symptoms of gastric ulcer, and, as some observers believe, may be the cause.

There is usually no temperature present in gastric ulcer unless there are complications, such as anaemia, peritonitis, etc. The urine in those cases where hyperacidity exists in the stomach is generally much less acid than normal, perhaps even alkaline with a consequent precipitation of phosphates.

The ulcer may penetrate the muscularis and attack the serosa, producing a perigastritis which may increase the symptoms of gastric irritation, causing vomiting and elevation of temperature. It is in this class of cases that we frequently get quite a rigidity of the right rectus muscle. Few text books speak of this symptom. I have noted it in one of my cases and in a recent article, Lichty¹⁴ speaks of it as one of the symptoms of gastric ulcer, but I do not believe it ever appears except in those cases with perigastric involvement.

If the ulcerative process continues and a perforation ensues, of course a very serious complication confronts us, in fact the case becomes surgical immediately, although nature kindly, but rarely, may wall it off by adhesions and prevent a general peritonitis—however, peritonitis due to perforation may be the first symptom presenting. When perforation occurs it is most usually downward into the peritoneum, or upward into the left pleura, and from there into the lung, causing a pulmonary gangrene. It may open into the pericardium the spleen, the head of the pancreas, left lobe of the liver or gall bladder. Whenever we meet a case of apparently spontaneous left-sided empyema we should at any rate think of the possibility of gastric ulcer. (Strumpell¹⁵). The average percentage of perforations in the literature is about 2 per cent.

The motility of the stomach at first may be normal or exaggerated on account of the rapid digestion of albumen by the excess *hcl.*, but if the ulcer is located near the pylorus, and an inflammatory hyperplasia has ensued, there may be a stenosis and consequent stagnation of food in the stomach. In truth, whenever the equation of resistance and muscular force is disturbed, a compensatory hypertrophy ensues and in this resulting sacculated stomach food is retained for hours and finally vomited.

One should be exceedingly careful in inflating a stomach where an active ulcer is present. Motility can be tested either by a Sahli capsule or by administering a capsule of salol (5 grs.). In either case they are

not acted on in an acid medium, but as soon as they pass into the duodenum and here meet the alkaline pancreatic juice the sahli capsule (which is really iodoform) is split up and appears in the urine as iodine, or the salol is split up into salicylate of soda and phenol, the salicylate being decomposed and appearing in the urine as salicyluric acid. Salicyluric acid is easily detected in the urine by the addition of a few drops of neutral ferric chloride solution when a violet color is produced. The iodine test in using the sahli is of course made with starch paper which has been moistened with nutric acid, the characteristic blue color indicating its presence. Here again one must be guarded in making a definite diagnosis. T. Sydney Short¹⁶ in a paper entitled "On a Special Form of Dilatation and Displacement of the Stomach," cites a number of cases recently seen by him of dilated stomachs not due to pyloric stenosis, but to the following causes: Some cases caused by carious teeth (especially lack of molars) thus swallowing heavy quasi-masticated food. Others were due to eating a hurried and large midday meal and assuming the erect posture afterwards, as in the case of shop girls, clerks, etc., and others to a general condition of ill health, debility and neurasthenia.

Traube¹⁷ mentions the frequent existence of certain points of tenderness (attributable to central irradiation) upon the back and along the vertebral column corresponding to the posterior roots of the lower thoracic and upper lumbar intercostal nerves, also to attacks of angina pectoris and intercostal neuralgia.

It has been asserted that gastric ulcer may come on during the course of some infectious disease. Dieulafoy¹⁸ considers that acute ulcer of the stomach is nearly always of infectious origin. He has seen a series of cases in which during the course of pneumonia haematemesis has occurred. On several occasions death has ensued, and the autopsy showed that the mucous membrane of the stomach was deeply eroded, and in nearly every case the pneumococcus was demonstrated almost in pure culture. Seldom had the ulceration penetrated the muscular coat, the ulcers were evidently acute, and of but few days standing, the weakening effect of the loss of blood caused death to ensue from the pneumonia, and a small artery was usually found to be eroded. The haematemesis usually occurred on the third to the fifth day of the pneumonia.

The differential diagnosis will be most usually between gastric ulcer, nervous gastralgia and malignant growths. In nervous gastralgia the location of the pain is not constant and is relieved by pressure, while the converse is true in ulcer. The pain in gastralgia may be entirely independent of food, while that of gastric ulcer bears a constant time relation to the ingestion of food. The chemism of digestion is but slightly disturbed in gastralgia. As for cancer, its rapid course, fetid eructations, accompanying cachexia, furred tongue, malodorous breath, deficient digestion, sometimes completes achylia, presence of lactic acid, and its frequency in later life will generally easily distinguish it. We may sometimes confound gastric ulcer with tabes with gastric crisis, but this would not be for long as a general bad health soon ensues and other distinctive symptoms may then differentiate it.

Cholecystitis may also be a cause of confusion which careful watching and palpation will soon clear up.

We must bear in mind that severe gastric disturbance can, and often is of reflex origin. An interesting case of this kind in which cancer of the pylorus was the diagnosis is mentioned by Chase & Bottomley.¹⁹ A woman 43 years of age had all the symptoms of gastric ulcer or cancer; a small tumor could be felt one inch to the right and below the navel. There was a long history of indigestion, constipation, pain in the epigastrium after eating which was relieved by soda. No haematemesis, no vomiting, nausea at the time of the pain, progressive loss of weight. The pain was excited by coarse foods, and the case diagnosed cancer of the pylorus. On operation, no evidence of ulcer or cancer could be made out the pylorus was patulous, search revealed several hard nodules in the right iliac region, which proved to be calcareous, enlarged and cheesy glands of the mesentery of the lower ileum. These were removed and the woman made a good recovery, manifesting no further gastric symptoms. This case is of interest because "it illustrates the now well recognized fact that pyloric spasm (to which the epigastric pain suffered here can be attributed) may be caused by irritation of any part of the intestinal tract embryologically derived from the mid-gut, and drawing its chief nerve supply from the sympathetic system."

Unquestionably the diagnosis of chronic gastric ulcer is not difficult, provided its usual symptom-picture presents, but there may be such va-

riations from the ordinary clinical history as to make its recognition exceeding difficult. However, Billings²⁰ says very tersely and pointedly: "Given a history of dyspepsia with pain, tenderness, haematemesis or melena, or of occult blood in the stomach contents and stool, hyperchlorhydria with evidences of gastric stagnation, if after a full meal the stomach does not become practically empty in seven hours, and if the stagnant element is hyperacid, and if it contains undigested starch cells, ulcer of the stomach or of the duodenum near the pylorus is present.

MEDICAL TREATMENT.

That both acute and chronic gastric ulcer can be treated medically with a fair measure of success is a fact that can not be controverted. That a larger percentage of cases recover that are medically treated than those that are surgically treated, is a question still open to debate. Immediate results in both fields are brilliant, but end results are indeed far from encouraging. Unquestionably these faulty end results of medical treatment are due to (a) an amelioration of existing symptoms and a consequent premature discharge of the patient, (b) possible healing of the ulcer, and its rehabilitation on account of dietetic errors, generally over-eating, (c) failure to build the patient up to a normal standard of haemoglobin, (d) return of neurasthenia on account of patient's returning to their work before being sufficiently strong to undertake it. The same reasons apply also to the end results of surgical treatment with the added reason of faulty technique, with the production of a vicious circle and its accompanying regurgitation of bile, pancreatic juice and gastric contents and improper drainage in stenotic cases.

In the medical treatment of gastric ulcer, either acute or chronic, the *sine qua non* is physical and mental rest. Undoubtedly the treatment will be empirical or symptomatic until something more definite as to the etiology is known, for of course the basic principle of all successful treatment is a preconceived knowledge of the etiological factor or factors in the production of that particular pathological condition.

It is interesting to note that despite the manifold credit that has been ascribed to trauma in the production of gastric ulcer that not one of the many experiments to produce ulcer in this manner has resulted successfully. Glass eaters, and knife swallowers are not subjects of this

disease, and in a recent gastrotomy by Dr. Gaylord (reported by Stockton²¹) upon one of these freaks, he removed 577 foreign bodies of various kinds in addition to 144 grains of broken glass, many fragments of which were embedded in the gastric mucosa. Numerous pieces of mucous membrane were separated from the stomach in the effort to remove the foreign bodies, yet they healed promptly and the man made a good recovery.

Paralleling Pawlow's exhaustive experiments on dogs is the brilliant work in the same line of Fenton B. Turck²² of Chicago. He carried on a painstaking series of experiments in an effort to produce gastric ulcers in dogs similar to those that we deal with in man. After injecting mustard oil in a dog's stomach every two or three days for fourteen months, he failed to produce an ulcer and remarks that "failure after such radical means demonstrated the futility of attempting to produce ulcer by simply local irritation." He succeeded in producing ulcers by feeding dogs with cultures of bacilli coli communis for variable lengths of time. His experiments led him to conclude that the cause of gastric ulcers was that some toxic condition seems to be produced which overcomes natural resistance, resulting in cytolysis and possibly some chemical substances formed within the alimentary tract which when absorbed may neutralize the protective bodies in the blood and tissues resulting in autocytolysis. Fuetterer²³ goes so far as to establish a dictum that haemoglobinemia is the real cause of gastric ulcer and that no ulcer can form unless there is marked deficiency in haemoglobin, and further that the ulcer must heal when the haemoglobin is increased to a certain amount. Based on this hypothesis, if he suspects the presence of a gastric ulcer he examines the blood taking the percentage of haemoglobin. Finding a deficiency he puts the patient to bed, gives him the juice of 5 lbs. of beef per day and examines the blood for haemoglobin percentage from time to time. His theory is not to starve the patient and decrease the haemoglobin, for under these conditions the ulcer will not heal. The report of Greenough & Joslin²⁴ in which is embodied the result of 187 cases treated in the Massachusetts General Hospital, seems to bear this out, as the subsequent history of 114 cases was obtained, and a larger percentage of cures occurred in those fed by the mouth than in those fed exclusively by the rectum. V. Ziemssen & V. Leube probably first advocated a complete rest cure in cases of gastric ulcer—rest

for the body and mind, and rest for the stomach. As an adjunct to this, they suggested the application of moist hot compresses which are supposed to lessen irritation. Cruveilheir of Paris in 1848 first advocated an exclusive milk diet in gastric ulcer, and suggested that it should be given in small quantities.

In my experience rectal alimentation is rather an uncertain quantity, and in the main an unsatisfactory form of nourishment. Some patients retain the nutriment well, while others (even with careful previous flushing with saline solution and elevated hips) are certain to expel the major part. In addition to this, nutreint enemata excite gastric secretion, however, it may be necessary to resort to them in cases of persistent haemorrhage, and for this purpose the following combination has given about the best results: One or two raw eggs well beaten, about six ounces of peptonized milk and a small bit of salt (the whole about eight ounces in volume) and given every six hours.

The treatment that I believe is giving the best results is that known as the Lenhartz treatment which is a milk and raw eggs diet theoretically suggested because it furnished a rich protein diet, that was readily consumed by the hyperacid gastric juice. This theory was well founded, and in actual practice has worked out nicely. In addition to this, a food of high caloric value is furnished, which builds up the patient instead of pulling him down as do a great many diets. The food is given in small quantities and at intervals of one hour during a fourteen hour day with rest at night, thus really putting a small amount of work upon the stomach and never loading it; and the excessive hcl. combines with the proteid food and is thus prevented from exerting its corroding action on the ulcer. Combined with this dietetic regime is the strict injunction of absolute rest in bed for three to four weeks. The routine course of treatment covers two weeks time and includes iced milk and iced raw eggs well beaten. Given separately each alternate hour, or together, they are kept in a covered vessel surrounded with ice and administered to the patient hourly with a spoon which is also kept ice cold. On the third day granulated sugar is added to the eggs, and from the sixth day scraped meat, boiled rice and zwiebach, and from the tenth day raw ham and butter. Applications of ice to the epigastrium, one or two grams of bismuth a day, and later some pre-

paration of iron and arsenic are added as constructive. The results obtained have been very gratifying. S. W. Lambert²⁵ reports five cases treated in this manner at the New York Hospital. These cases all presented positive evidence of haemorrhage at the beginning of treatment and should be classified as belonging to the severe types of the disease. Four of the patients presented a marked anaemia from loss of blood, and the haemorrhage continued for eight, twelve, thirteen and twenty-one days respectively after beginning treatment. Each case was discharged presenting no gastric symptoms and has continued well since.

Following is the history of a case I saw in November last: D. H., male, age 62, foreman wood working shop. Has always been a robust man, never had a serious illness. Family history negative. Indefinite history of indigestion, attacks ephemeral and long time apart. Early part of October noticed pain in epigastrium about two inches to the right of median line, which came on about an hour after eating. Had been a steady but not excessive drinker all his life. Cirrhosis of liver at first suspected. Put on milk diet and instructed to return so as to let me watch the case. Dietary not complied with and did not see patient again until November 4 when I was called to see him at his home. Patient while at his work had profuse haemorrhage and severe pain in epigastrium. Was brought home in ambulance, suffering intensely. Had another haemorrhage shortly after arriving home, the blood was of bright red color and came out in several distinct gushes, unquestionably from stomach. These haemorrhages continued every two hours or so for nearly twenty-four hours. Ice given by mouth and applied externally to epigastrium. Morphia hypodermically, and also teaspoonful adrenalin chloride 1 to 1,000 every 6 hours. No food for twenty-four hours, then put on an exclusive milk diet.

The haemorrhage recurred on November 6th, but not near as profusely as the first attacks.

Milk diet, and large doses of Bismuth subcarbonate given—temperature running about 100, pulse about 90. Patient seems to be doing fairly well; is confined to bed, bowels constipated, tongue clean. No occult blood in stools.

On December 1st, patient has a fainting spell while sitting up, and about two hours afterwards a profuse haemorrhage from the bowels—

the blood being mostly in clots. Vomits some blood also and becomes completely prostrated. Looks as if he will die from loss of blood and shock. Priest called and last sacrament given. Under stimulation he rallies and gradually regains his strength—has about two degrees temperature each evening—complains a great deal of sharp pain in left shoulder, especially when any food is placed in the stomach. No great progress being made on a guarded diet, so on January last patient is put on Lenhartz diet. Patient gains rapidly, and expresses himself each day as feeling much better. Red count 2,000,000—h. b. 50.

On January 22d, patient sitting up. Light diet continued and patient improving rapidly, but of course still weak. On February 21st while sitting in a window contracts severe cold, and dies of Pneumonia February 23rd. The point of interest here is that after the beginning of the Lenhartz diet, no further gastric symptoms appeared.

In another case recently of hyperchlohydria showing a total acidity of 90 (gastric ulcer suspected), I have obtained a most satisfactory result with the Lenhartz treatment, and now have under treatment a woman with marked gastrectasis, and pyloric stenosis from chronic ulcer, and am not at this time able to give any end result, but can state that her general health and comfort is much improved under the treatment.

As these patients improve and are able to take a more general menu, an ideal diet is the proteids found in cereals and vegetables, egg albumen, milk and well cooked meats containing few extractives such as the white meat of chicken, the white meat of fish, lamb and sweetbreads. The chlorophyl found in spinach, mustard and turnip greens seems to exert a peculiarly beneficial effect.

It is well here to bear in mind that Bickel²³ has pointed out from his experiments on human beings (as also shown by Pawlow on dogs) that the following substances elicit an abundant gastric secretion and should be avoided. Among drinks, all alcoholic and carbonated fluids, animal broths and meat extracts in solution; all the spices including mustard, pepper, salt, cloves, etc.; among solid foods red meats, when cooked rare, bread and all foods resembling bread in composition, that is in a combination of albumen and starch. On the other hand, a slight secretion only is elicited by fats and cream; by well done meats and coarse vegetable foods like boiled potatoes cabbage, spinach, turnips and carrots,

and by sugar and sweets. It is on account of this diminution of secretion that fats and cream have been so generally recommended in the diet of gastric ulcer patients.

Where milk coagulates solidly and seems to disagree with some patients, Von Dungern's process of forming the curds before administering the milk is an excellent procedure. To do this, pepsin (a lab ferment) is added to luke warm milk and the whole shaken up well for two or three minutes, when a fine flocculent coagulation will have taken place and in addition a nice flavor given to the milk. If shaken again it will liquify, but soon coagulates upon standing.

As for the administration of drugs, Kussmaul who in 1867 introduced the first stomach tube, first advocated the administration of large doses of bismuth (1 to 2 drachms) suspended in water, and given before meals.

The Fleiner method consists of washing out a fasting stomach and introducing through the tube 3 to 5 drams of bismuth subnitrate suspended in 6 ounces of water. The patient should assume the recumbent position, and in about an hour his breakfast can be given. Fleiner claims that the bismuth is an excellent protective, and possesses an astringent and antiseptic action, as well as counteracting the hyperacidity. I have had no personal experience with the method, but have used the bismuth subcarbonate by mouth as suggested by Boas.

For the control of haemorrhage gelatin was formerly lauded extensively for its supposed action in increasing the fibrin in the blood, but clinical experience has not borne this out. Adrenalin as mentioned above, and in extreme cases a spray of ice water through a carefully introduced stomach tube as suggested by Ewald are excellent methods. As for the hypodermic administration of ergot, I have no confidence in the method, as ergot raises the blood pressure and is more apt to do harm than good.

For the pain, orthoform in 15 grain doses is generally effective and has some diagnostic value, as it will not anaesthetize nerve endings where they are protected by skin or mucous membrane. Anesthesin and cocaine are also meritorious for the relief of the pain. Morphine of course will relieve pain, but as pointed out by Alexander Lambert²⁷ it tends to increase gastric acidity.

Rodman⁸ suggests for prompt relief of pain the introduction through a stomach tube of hot water from 120 to 130 degrees Fahrenheit.

As curative measures, nitrate of silver and perchloride of iron have been suggested on account of their astringent action. Ewald²⁸ administers in a solution, 0.2 silver nitrate to 200 of water, and gives a tablespoonful every two hours, remarking that he has seen a decided amelioration of symptoms and even a complete cure after using it. More often he has had to abandon it on account of increased disturbance in the stomach, nausea, anorexia and obstinate constipation.

Cohnheim²⁹ first advocated the use of olive oil in gastric ulcer, hyperacidity and stenosis. It is given in gradually increasing doses from a tablespoonful to a wineglassful. If the oil is not repugnant to the patient it will undoubtedly exert a soothing influence on the gastric mucosa, relieving pain and spasm, and counteracting the acidity. Cowie and Munn³⁰ have recently made a long series of experiments to determine the action of olive oil on gastric acidity and motility. Their conclusions are that olive oil and cotton seed oil when given in connection with the usual test breakfast decrease the gastric acidity at the end of the hour and retard evacuation of the stomach. That the therapeutic value of oil is its action as an antacid, it being preferable to other antacids on account of its caloric value. It should be used in hyperchlorhydria and should follow the meal. In stasis and persistent slow evacuation it should be eschewed. In hypermotility it may be given before, during or after a meal. It lowers gastric secretion both by reflex central inhibitory stimulation and by mechanical action.

For the vomiting a strict adherence to the proper dietetic regime will generally suffice. If it continues, pellets of ice with a few drops of chloroform may give relief, or small doses of morphine hypodermically. During convalescence as reconstructives, a pill of arsenious acid and ferri sesquichlorate is of great value. Perhaps the best iron preparation here indicated is fersan which is a combination of iron and phosphorus found in the erythrocyte of fresh ox blood. It is, chemically speaking, an iron containing a paranucleo-proteid in combination, is free from peptones and albumoses, that produce digestive disturbances and diarrhoea, and has but a slight trace of extractive matter. It is odorless and tasteless, and requires no digestive work on the part of the stomach: is freely soluble in water, and not acted upon by the gastric juice, hence passes through the stomach unchanged, but is converted by

the alkaline duodenal secretions into an alkaline albuminate and easily absorbed. The dose is 15 grains, administered an hour after eating, and the results obtained from its use have been highly satisfactory.

Recent observers, the Mayos, Moynihan and Mayo Robson especially, have repeatedly called attention to the frequency of the occurrence of carcinoma on the cicatrix of apparently healed ulcers, or the engrafting of the malignant infiltration directly upon the unhealed ulcer. Rodman³¹ in an excellent paper of recent date, sounds a note of warning along this line, and insists upon surgical intervention (gastroenterostomy) in all cases that have been treated medically and that still display any suspicious gastric symptoms. A case that I recently saw will forcefully illustrate the wisdom of this procedure:

W. H. W., male, age 64. Family history good. History of indigestion. About eight years ago had all of his teeth extracted. About one year ago noticed he couldn't eat the usual meal without much discomfort. Eight months ago complained constantly of indigestion, even while on the lightest diet. General health becoming much impaired. Went away to Tennessee in December thinking change would benefit him. Returned about January 10th this year much emaciated, and complaining of indigestion more than ever. Has sour stomach and feeling of heaviness in epigastrium after eating. Vomits frequently, usually several hours after eating—the vomitus consisting of partly digested food. Goes to neighboring town and while there becomes so weak has to go to bed.

I saw him about January 20th and advised bringing him to Birmingham where he could have hospital treatment. Admitted to hospital January 30, 1908. Temperature 100, pulse 98. Vomited several times during the night. Urine negative, red cells 1,500,000, h. b. 60. Skin pale and waxy. Ewald test meal shows no hcl. present, and no digestion of the bread. Lactic acid present. Sahli capsule testing motility does not show in urine for twelve hours. Iodide of potash (Penzoltz's method) shows delayed absorption—not showing in saliva for 59 minutes. Stomach inflated through tube and extends 1 1-2 inches below umbilicus. Two other test meals still show complete absence of hcl. and presence of latic acid. Coffee ground vomit continues every few days. Occult blood constantly present in stools. Diagnosis: carcinoma of pylorus, stenosis, gastrectasis.

Much relief was given by lavage. Patient was fed per rectum for two weeks with hopes of building him up enough to withstand a gastro-enterostomy. This was of no avail however, the patient gradually growing weaker, vomiting much coffee ground material (deteriorated blood) and finally succumbing March 1st. Autopsy confirmed the diagnosis. A small carcinoma, which looked very much like an ulcer was found in the pyloric stomach on lesser curvature, and a large amount of infiltration around it, so that the pyloric opening was practically closed. The adjacent glands were but slightly involved.

Unquestionably if this patient had been seen several months earlier and a no loop gastro-enterostomy done his life could have been prolonged for several years. It is the opinion of the writer that this case was primarily a gastric ulcer, with subsequent malignant implantation.

Now as to the relative merit of medical and surgical treatment, no statistics are of any value whatever as yet. The technique of stomach surgery has wonderfully improved in the past two or three years, and a large percentage of recoveries are being made, but end results in many of these brilliant recoveries are yet to be obtained.

To my mind, gastric ulcer per se is a medical disease. With its many complications it may belong to either field. It is difficult to map out the border line. I am not one who believes that severe haemorrhage is an indication for surgical intervention. These cases can be relieved medically. It is a difficult thing for the surgeon to find these bleeding points and there is the added danger of shock.

It is in cases of stenosis, perigastric adhesions, continued haemorrhages that are not relieved by medical treatment, and perforation that surgery is adequately adapted, in fact imperatively necessary and offers the dernier hope of any relief for the patient.

CONCLUSIONS.

1. Gastric ulcer uncomplicated is a strictly medical disease.
2. There are complications which arise, such as haemorrhage, anaemia, and persistent vomiting, which still are amenable to medical treatment.
3. As far as the treatment of the ulcer itself is concerned, absolute rest in bed for at least four weeks is imperative, and the Lenhartz diet is the best yet devised, being far superior to any form of rectal nourish-

ment, because it really does give the stomach rest and at the same time supplies the patient with a highly nutritive food.

4. Drugs are of little value, as far as healing the ulcer is concerned.

5. Olive oil on account of its caloric value and property of reducing hyperacidity is of much value, but should not be given in cases where there is pyloric stenosis, as it retards evacuation of the stomach contents.

6. The haemoglobin percentage should be carefully watched and some form of iron or arsenic administered to maintain it.

7. A careful dietetic regime should be enforced for practically a year, and no patient should be considered cured unless the cessation of gastric symptoms lasts for at least two years.

8. Uncured ulcers, quasi-cured ulcers, and even the cicatrix of healed ulcers offer a most inviting habitat for carcinoma later in life.

9. Persistent, unrelieved haemorrhage, painful perigastric adhesions, hyperplastic infiltrations resulting in pyloric stenosis, and perforation are phases of gastric ulcer that unquestionably belong to surgery.

BIBLIOGRAPHY.

1. Cheney, Jour. Amer. Med. Assoc., Feb. 8, 1908.
2. Aaron, Dominion Med. Monthly, Jan., 1908.
3. Rodman, Jour. Amer. Med. Assoc., Sept. 15, 1906.
4. Musser, Amer. Jour. Med. Sciences, Dec., 1907.
5. Howard, Quoted by Musser, above article.
6. D'Arcy Power, British Med. Jour., Jan. 25, 1908.
7. McNevin & Herrick, Jour. Amer. Med. Assoc., July 7, 1906.
8. W. J. Mayo, St. Paul Med. Jour., Feb., 1904.
9. Cantile, Sajous System.
10. Byron Bramwell, Lancet, March 9, 1901.
11. Chace, Post Graduate, Nov., 1907.
12. J. Dutton Steele, Jour. Amer. Med. Assoc., Aug. 18, 1906.
13. Stewart, Therapeutic Gazette, March 15, 1901.
14. Lichty, Cleveland Med. Jour., March, 1908.
15. Strumpell, Text Book of Medicine.
16. T. Sydney Short, British Med. Jour., Jan. 18, 1908.
17. Traube, Quoted by Ewald, Diseases of Digestive System, "Die Deutsche Klinik."
18. Dieulofof, Med. News, Aug. 18, 1900.

19. Chase and Bottomley, Boston Med. & Surg. Jour.
20. Billings, Jour. Amer. Med. Assoc., Sept. 15, 1906.
21. Stockton, Amer. Jour. of Med. Sciences Dec., 1907.
22. Turck, Jour. Amer. Med. Assoc., June 9, 1906.
23. Fuetterer, Jour. Amer. Med. Assoc., Jan. 11, 1902.
24. Greenough and Joslin, Amer. Jour. Med. Sciences, Aug., 1899;
Jour. Amer. Med. Assoc. Vol. 33, No. 6.
25. S. W. Lambert, Amer. Jour. Med Sciences, Jan., 1908.
26. Bickel. Quoted by Cheney, Amer. Jour. Med. Sciences, Jan., 1908.
27. Alexander Lambert, Jour. Amer. Med. Assoc., Sep. 15, 1906.
28. Ewald, Die Deutsche Klinik, Diseases of the Digestive System.
29. P. Cohnheim, Heilwirkung Grosser Dosen von Olivenol—Zeitsche
Klin. Med. Bd. LII.
30. Cowie and Munn, Archives of Internal Medicine, Jan. 15, 1908.
31. Rodman, Jour. Amer. Med. Assoc., Jan., 1908.
32. F. Simon, Quoted by J. Dutton Steele, Progressive Medicine, Dec.
1, 1907.

Diagnosis, Prognosis and Treatment of Tubercular Joints.*

*By Ira J. Sellers, M. D.,
Birmingham, Ala.*

Tubercular joints are met with almost daily throughout the larger part of this country and throughout the civilized world. Like tubercular conditions of the soft parts the earlier stages are frequently overlooked until the patient's condition becomes serious and the final termination of the treatment in many cases uncertain. I do not think the tubercular conditions can be said to be the result of the "white plague" of modern civilization, for we have evidences of this disease well described by some of the ancient writers, and it is spoken of by many writers from time to time even before the days of Hippocrates. That the ancients observed the conditions carefully is shown by some of the writers 500 years B. C., in which their description in the conditions of the bone tissue is so carefully set forth that we can not mistake it.

*Read before the Jefferson County Medical Society.

Tubercular conditions of joints, primarily, are confined almost entirely to the young, and by far the largest percentage to those under ten years of age. Probably 60 per cent. to 30 per cent. from 10 to 15: the remaining beyond the age of 15. In adults and middle age the condition is due to secondary infection or some constitutional condition becoming complicated with the particular joint involved. The vertebral column is more often involved than any other one set of joints in the body. However, this is closely followed by the hip joint: then the knee, ankle, elbow, wrist and shoulder joints. I have seen personally but few cases involving the shoulder joint. The tarsus and metatarsus may be involved primarily or secondarily from the adjacent joints. I have had in my own practice several cases in which the tarsus alone was involved and in which I succeeded in maintaining good functional use of the joint by removal of the primary foci. Males and females are about equally divided, males showing in some statistics a slight excess. The vertebrae and hips are the things most commonly seen and from the study of statistics it would seem that they are involved about five times as frequently as the knee, and ten times as frequently as the ankle. This fact should make us doubly cautious in making such diagnosis in young children as rheumatism, growing pains, sprains, etc. The diagnosis of such conditions should never be made unless we can exclude tubercular conditions of the joints complained of, and we can satisfy ourselves beyond a single doubt that there has been an injury. That the mortality in untreated cases is exceedingly high, there can be no doubt, although we have no way by which reliable statistics may be collected. We do know, however, that even in cases properly cared for, and we can compare them easily, the mortality still remains alarming. Whitman and others put the mortality of the vertebral column from 20 per cent. up, and the fatal termination usually due to some complication. The hip joint is almost equally as fatal. The younger the patient, the better the prognosis.

King and Burns in their statistics on the hip and knee, give the table of mortalities as follows:

Less than 15 years of age	20 per cent.
15 to 30	24 per cent.
30 to 40	44 per cent.
Above 40	60 per cent.

This enormous mortality beyond 40 is accounted for from the fact that the joint is usually a secondary infection, these patients usually having primarily pulmonary or abdominal lesions. The spine furnishes a ready infection to the lungs, pleural, and abdominal cavities and it is not uncommon to see the abdominal cavity involved secondarily from the hips or even the knee joints. Where the condition is extensive in any one of these joints, toxemia as a rule is great, as it is impossible during the suppurative stage to avoid mixed infection. Amyloid condition of the kidneys is one of the complications to be dreaded. We know that this might occur in any chronic suppurative tubercular condition, but it seems to be especially the case in tubercular joint conditions and the kidneys should be closely watched even in mild conditions. Trauma would seem to play a very important part in exciting the condition in many cases. However, this is by no means the only exciting agent as in constitutional conditions both hygienic and hereditary conditions might play an even more important part than the trauma. It is so common to get a traumatic history when children are brought for the first examination for the relief of the so-called sprained joints, growing pains, etc. (that by the family), the conditions are attributed solely to some accident (and though minor it may have been), that personally I believe it is a very important factor in many cases. Of course the infecting agent in joints is the same as that of the lungs, the abdominal cavity, meninges, etc.

DIAGNOSIS AND PROGNOSIS.

When we come to making up the final diagnosis in suspected tubercular joint conditions, we must take into consideration the history, age, hygiene and constitutional conditions in each individual case and in addition the general and local conditions in each case. Sex plays no important part. At first thought it would seem easy to make a positive or negative diagnosis, but such is not the case. In the early stages when relief is first sought it is sometimes difficult to be positive, and we have to use almost every known method. Those seeking relief from joint troubles are almost entirely confined to children and by far the larger number to children under ten years of age, conditions complained of being pain, and some stiffness. On examination we find the joints slightly enlarged, rigid muscles, pain referred to

parts supplied by the nerves which may be involved in inflammatory process; fever running between 99 1-2 to 101 in the afternoon, usually normal in the morning: pulse may or may not be accelerated. In this stage the digestive and general conditions, if impaired, are slight. The patient usually says that all other functions are normal. Of course in the latter stages we have abscesses, sinus, destruction of bone and soft tissue, emaciation, hectic fever, etc. In the latter condition the diagnosis can be readily and unquestionably made. Tuberculine has been used quite extensively and in some cases is very valuable. However, this should be looked on as an agent which is dangerous and capable of doing great harm if the quantities used are too large. Recently the eye has been used to obtain the reaction, by dissolving opthalmic tuberculine disc in sterile water and instilling in the eye. Regardless of the method employed to get tuberculine in the system, where this disease is present the reaction in some cases is rather severe, producing chills, high fever depression and sweats. Personally I would not use this method except in cases where I could not make the diagnosis otherwise.

The x-ray is probably our greatest aid to a diagnosis in doubtful cases besides tuberculine in doubtful cases. Those who are familiar with reading x-ray plates, as a rule will have no difficulty in making the diagnosis, taking into consideration the history and physical signs. In this respect you might say that like many other agents of diagnosis it is of relative value. But as a rule we can differentiate between tubercular joints and arthritis deformans, congenital dislocations, epiphyseal separation, osteomyelitis, fracture of the neck or the femur, surgical neck or the humerus, typhoid joints, sarcomata, trauma involving the soft tissues alone, neuralgia and rheumatism, the last two conditions named being the diagnosis so frequently made in these early stages. the two main conditions to be readily eliminated. Specific bone involvement and sequestra must also be considered. The conditions in and around the joint as shown by the skyagram, being a cloudy thickening, irregular shape with rough irregular bone surfaces. Such a picture is not seen in any of the other conditions mentioned, the nearest approaching it being the typhoid joints. In sarcomata we get the characteristic mottling in the skyagram. In arthritis deformans the

skyagram shows the joint more or less enlarged while the outlines are clear cut, not cloudy, but irregular. No trouble, of course, would be experienced in dislocations and fractures. In neuralgia and rheumatism, osteomyelitis and epipheseal separation, the bone destruction being so characteristic from the very inception of the disease a mistake could hardly be made. The attitude assumed by the patient is different according to the joint or joints involved and in many cases is said to be characteristic. Mensuration is also important. At first we have the apparent lengthening which does not exist; later the apparent and real shortening. Rigidity of the muscles and pain will attend all motion. The atrophy of muscles and the referred pain must all be carefully considered.

As to prognosis, this depends largely on the general condition of the patient, hygiene, history, part involved, age of the patient, absence or presence of complications, and the ability of the patient to resist disease and carry out the necessary mechanical treatment. The vertebral column furnishes the highest rate of mortality and is always a serious condition, and if not treated early, prognosis as a rule, is unfavorable. Next comes the hips, knee, etc. Secondary complications, of course, are the things to be dreaded. In young children the prognosis is much better than in older children and adults. Deformities in some of these cases are great at best. There is always slight deformity. The greatest deformities happen, of course, in the vertebral column, producing the characteristics in the well known hunchback. If the cervical vertebrae are involved the prognosis is unfavorable. Next comes the dorsal. The hips and knees as a rule are partially or wholly stiff as are also the other joints.

As it well known, deformity is no respecter of persons, whether rich or poor, high or low, male or female. It is especially true in the young and occasionally so in the old. The effect on the intellect in these individuals is well shown in many instances and this has been referred to by writers for centuries, but it is surprising to see the sunny nature of many of these unfortunates. An English writer has graphically described the mental sufferings in some of his characters, notably the "Duke of Gloucester," as follows:

"Love foresworn me in my mother's womb;
And, for I should not deal in her soft laws
She did corrupt frail nature with some bribe
To shrink my arm up like some withered shrub;
To make an envious mountain on my back,
Where sits deformity to mock my body;*
To shape my legs of an unequal size;
To disproportion me in every part;
Like to a chaos, or an unlik'd bear-whelp
That carries no impression like the dam."

Hay, an English writer, in his essay, "Deformity of the Human Body," vindicates the deformed to which class he himself belonged. Deformity, from this terrible disease, though great it be, is not necessarily a bar to fame or greatness, but unquestionably, in a large majority of cases it limits very materially their usefulness.

Agesilaus, Alexander the Great, and Socrates, are representatives of the ancients, who were deformed. Scott, Pope, Lord Burleigh, Byron and Mendelssohn, and others, represent those in modern times, and what may be accomplished in spite of great deformity.

TREATMENT.

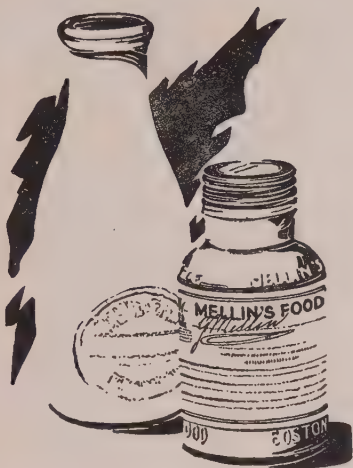
Hygiene and such mechanical appliances as may be indicated for their respective conditions are the two most important factors in preventing deformity and curing the condition. The mechanical appliances are many and varied, being suited to different conditions and different joints. Condition of the spine may be treated with spine braces, plaster jackets, celluloid corsets, etc., as preferred and thought best by each individual in each case. Conditions of the hip, knee, ankle, etc., may be well cared for by either braces (of which the Thomas is a good example) or plaster casts, etc. Operative treatment is occasionally called for and no hesitation should be indulged in where the indications for them are manifest. Abscesses should be opened, sinuses curetted, disinfected and packed with gauze. When bone tissue is destroyed beyond repair osteotomy may be performed, resection of the joint may be called for in some cases. When the tissues in and around the joint are extensively involved, fever, swelling, etc., in the absence of free pus many good results have been obtained by the injection

into the joint of 10 per cent. iodoform emulsion; 5, 10 or 15 c. c. being used every two or more weeks as indicated. This is quite painful and should not be done oftener than is absolutely necessary. Sterilization of sinuses and abscess cavities may be readily had by the use of carbolic acid and in one or two minutes should be neutralized with alcohol and thoroughly irrigated with normal salt solution. Personally I prefer wiping with dry sterile gauze. The medicinal treatment with a view of curing these cases is contra-indicated and such drugs as may be used are only indicated from time to time to meet some special acute condition. As to the length of time required for the treatment and supervision of these cases, it varies from a few months to several years, depending largely on the part involved and the resistance of the patient to overcome the disease at the time the treatment was begun.

TUBERCULOSIS OTHER THAN PULMONARY TREATED WITH TUBERCULIN—REPORT OF CASES.

G. R. Pogue of Greely, Col., describes the treatment of tuberculous adenitis and other nonpulmonary tuberculous lesions by the injection of Koch's old tuberculin. The glands were reduced in size, discharging sinuses healed, and there was neither spread nor recurrence of the disease. The author reports ten cases of adenitis, four of tuberculous otitis media, three of deposits in the pharynx, four of tuberculosis of the bladder, three of joint tuberculosis, and one of tuberculous testicle. In the joint cases Bier's hyperemia was added to the tuberculin treatment. The introduction of tubercle bacillus preparations stimulates the production of tuberculoopsonins and causes a hyperemia around the tuberculous area, thus aiding in the process of inoculation.—*Medical Record*, August 29, 1908.

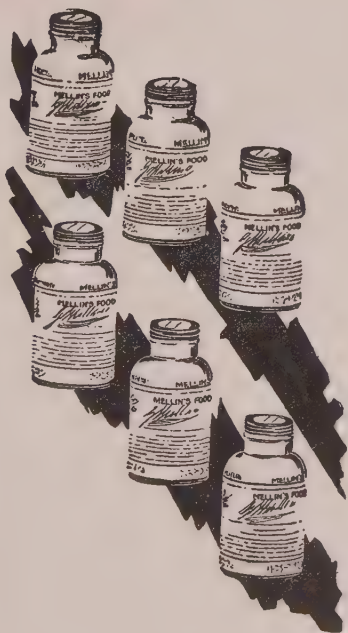
Dysmenorrhoea, sterility and vesical irritation are not classical symptoms of antelexion as commonly taught, the dysmenorrhoea and sterility being due to the accompanying myometritis, ovarian and oviductal inflammation to an accompanying cystitis, the bladder being involved in a general pelvic inflammation.—*Dr. Lucy Waite*.



¶ Authorities agree that Fresh Milk must furnish the basis of operations in preparing a substitute for Mother's Milk. Mellin's Food is to be used to modify Fresh Milk.

Literature and Samples upon request.

Mellin's Food Company,
Boston, Mass.



¶ Doctor, do you need samples of Mellin's Food?

¶ If so, write us and we will send you a supply, Free of charge.

Literature upon request.

Mellin's Food Company,
Boston, Mass.

GASTRIC INSUFFICIENCY

Is a constant symptom of failing vitality.
The potent influence of

Gray's Glycerine Tonic Comp.

In rapidly restoring the digestive function well
indicates its remarkable capacity for
increasing general bodily vigor.
Thousands of earnest capable physicians know
and appreciate the reconstructive properties
of this effective tonic.

THE PURDUE FREDERICK COMPANY

298 BROADWAY, NEW YORK



Editorial.

W. H. BELL, M. D., Editor.

The Journal will be mailed on or about the 15th of the Month. Subscribers failing to receive it promptly will please notify us at once

We cannot promise to furnish back numbers

SUBSCRIPTION \$2.00 A YEAR, IN ADVANCE

The editor is not responsible for views expressed by contributors.

All communications should be addressed to
**THE ALABAMA MEDICAL JOURNAL, 109½ N.
20th St , Birmingham, Ala.**

The Business Side of Practicing Medicine.

The business side of the doctor's work is too often neglected in his desire and eagerness for excellence in the scientific side. It is well for us to have before us always the high ideals of our profession, but we can not escape the grocer and the tax collector. The expenses of the doctor must be met, as well as his patients relieved. In justice to his family he must be a good business man as well as a good doctor. It is not undignified to consider the practical business relations of the doctor to his professional work; it is a lack of wisdom not to consider them.

As forcefully and frankly expressed by a doctor recently, doctors are professional men in every sense of the word; they have the mental labor of lawyers, the moral standing of ministers, the technical knowledge of organized artisans and the business qualifications of school children. He says, "The average man will give a lawyer \$300 to

\$500, together with a lifetime's praise, to keep him out of the penitentiary for from two to ten years, and at the same time he will raise a phosphorescent glow and a kick that can be heard around the world if a doctor charges him \$50 to \$100 to keep him out of hell for a lifetime. We are the only people under God's ethereal tent today who keep open shops twenty-four hours each day and 365 days in each year. We are also the only laborers to keep on working for people who do not pay. I can carry my part of charity with as good a grace as most men. I can go through rain, snow or mud and do my best, provided the case is one of worthy need, but to reward continually down right rascality, willful drunkenness and wanton laziness is getting out of my line. The average doctor tries to do too much work. Every doctor wants everybody to patronize him. He likes to be going night and day, rain or shine, Sunday or week-day, hot or cold. This is a business mistake. It wears a doctor to a frazzle. It gives him no time for bill-collecting and business matters; no time for patients who naturally feel neglected and are slow to pay as a consequence. A doctor can do better work, more good, and build up a more enviable reputation if he coolly takes his time and is careful and painstaking in his examinations."

The Bibb County Medical Society.

We acknowledge receipt of an invitation to attend an anti-tuberculosis meeting of the Bibb County Medical Society held in the opera house at West Blocton on the evening of October 6th. Only circumstances over which we had no control would have prevented attendance. We have learned that there was a good attendance and a splendid meeting. Dr. B. L. Wyman, the President of the State Association, was present and delivered an address. Other speakers on the program were Dr. W. H. Sanders, Dr. W. G. Harrison, Dr. J. U. Ray, Dr. M. C. Thomas, Dr. W. B. Williams, and Dr. L. E. Peacock.

The Bibb County Society is one of our best societies and their meetings are always profitable and pleasant.

The Atlanta Meeting of the Southern Medical Association.

Everything points to a most successful meeting of this association in Atlanta, November 10-12. The preliminary program that has been

submitted is full of interesting subjects by noted physicians. A large attendance is expected. The doctors of Alabama are urged to attend and take part in this meeting.

Arrangements have been made for reduced rates on all roads, the tickets on sale November 7, 8 and 9 only.

Let us all give our patients a few days rest and go to Atlanta and help to make this meeting a big success.

Following is the program:

PROGRAM

Southern Medical Association, Atlanta, Ga. Nov., 10-12, 1908.

Section on Ophthalmology will meet at Kimball House, Room 104.

Section on Surgery, in Assembly Room Piedmont Hotel.

Section on Medicine and General Meetings, Ball Room, Kimball House.

Calling of the meeting to order by the President.

Prayer.

Address of Welcome from City and State—Hon. Hoke Smith, Governor of Georgia, Atlanta.

Address of Welcome from Physicians—J. C. Olmstead, Atlanta, Ga.

Response—G. C. Savage, Nashville, Tenn.

Report of the Committee of Arrangements.

President's Address—B. L. Wyman, Birmingham, Ala.

Training of Feeble-minded Children—Mrs. Nelson, Murfreesboro, Tenn.

SECTION ON SURGERY.

W. F. Westmoreland, Chairman,
Atlanta, Ga.

Jere L. Crook, Secretary,
Jackson, Tenn.

A Quick Method of Curing Beginning Gonorrhoeal Urethritis—Edgar G. Ballenger, Atlanta, Ga.

Post Operative Ileus; Early and Repeated Operations for Relief with Report of Cases—F. G. DuBose, Selma, Ala.

Radical Ano-Rectal Surgery Without General Anesthesia—A. B. Cook, Nashville, Tenn.

Hemorrhoids—C. Holtzelaw, Chattanooga, Tenn.

Intestinal Obstruction. Abstracts. Classification. Etiology, Symptoms.

Surgical Treatment—I. J. Sellers, Birmingham, Ala.

Ureteral Catheterization—R. A. Barr, Nashville, Tenn.

Plaster of Paris—A Universal Fracture Dressing—J. D. S. Davis, Birmingham, Ala.

A Suggestion in Drainage in Supra-pubic Cystotomy—A Combined Catheter a Demure and Supra-pubic Drain—E. R. Carson, Savannah, Ga.

Hernia—Danger in the Use of the Truss—S. W. Johnson, Vicksburg, Miss.

The Technique of Negro-Cabin Surgery—John Darrington, Yazoo City, Miss.

The Results Obtained with Vaccines in Chronic Infections—J. E. Paulin, Atlanta, Ga.

Dermoid Ovarian Tumors of Unusual Size—E. W. Liell, Jacksonville, Fla.

A Case of Thrombus in the Left Popliteal Artery, Complicating an Appendiceal Abscess—J. L. Campbell, Atlanta, Ga.

Treatment of Habitual Scoliosis by Passive and Active Corrections—Theodore Toepel, Atlanta, Ga.

A Casual Review of the Work on Appendicitis—Willis Jones, Atlanta, Ga.

Urethral Stricture—W. L. Campion, Atlanta, Ga.

A Brief Consideration of Some of the Side Lines or Auxiliaries to the Surgeon—Shelby C. Carson, Greensboro, Ala.

Conservation of Energy and Multiple Operations in Surgical Work—R. R. Kime, Atlanta, Ga.

Tumors of the Bladder—A. L. Fowler, Atlanta, Ga.

Anatomy of Peritoneum and Gastro-Intestinal Tract From a Standpoint of Development—W. B. Armstrong, Atlanta, Ga.

Surgical Diseases of the Testicle—W. B. Goldsmith, Atlanta, Ga.

The Surgical Consideration of Exophthalmic Goitre—G. P. Huguley, Atlanta, Ga.

Stimulation During Anesthesia—W. A. Selman, Atlanta, Ga.

Recent Development in My Method of Treating Structural Scoliosis. Exhibition of Apparatus—Michael Hoke, Atlanta, Ga.

Treatment of Hand Injuries With Wet Antiseptic Dressings—W. P. Nicholson, Atlanta, Ga.

The Importance of Examining for the Uncinaria in Some Surgical Cases—E. D. Highsmith, Atlanta, Ga.

Results Obtained with Radium Treatment—J. L. Crook, Jackson, Tennessee.

Traumatic Epilepsy—J. L. Crook, Jackson, Tenn.

Typhoid Perforations with Report of Two Operative Cases—W. M. Jordan, Birmingham, Ala.

Acute Infection of the Gall-Bladder as a Surgical Complication of Typhoid Fever—J. M. Mason, Birmingham, Ala.

Cholecystitis as a Complication and Sequela in Typhoid Fever with a Report of Eight Cases Operated Upon—E. M. Prince, Birmingham, Alabama.

Epithelial Sowing as a Means of Skin Grafting—L. W. Childs, Atlanta, Ga.

Appendicitis in the Negro—S. T. Barnett, Atlanta, Ga.

Varicocele, Some Points in the Technique of the Operation—J. H. John, Atlanta, Ga.

Spinal Injuries—Real and Otherwise—W. W. Crawford, Hattiesburg, Mississippi.

Burns and Scalds—R. M. Cunningham, Ensley, Ala.

Erysipelas—Report of Case with Fatal Complications—Z. W. Chamblee, North Birmingham, Ala.

SECTION ON MEDICINE.

Seale Harris, Chairman,

Mobile, Ala.

H. E. Mitchell, Secretary.

Birmingham, Ala.

Recent Additions to the Diagnosis of Circulatory Disorders—George Dock, New Orleans, La.

Some Observations on the Serum Diagnosis of Syphilis—Wm. Litterer, Nashville, Tenn.

Physical Diagnosis—Geo. S. Bel, New Orleans, La.

Mongolioids—J. Ross Snyder, Birmingham, Ala.

Anorexia—Geo. N. Niles, Atlanta, Ga.

A Plea for Smaller Families—Elliott Kiblinger and A. Schwing Kiblinger, Alexandria, La.

The Care of the Pregnant Woman—W. H. Bell, Birmingham, Ala.

Catarrhal Colitis and Colica Mucosa—Raymond Wallace, Chattanooga, Tenn.

Polycythemia with Associated Enlargement of the Spleen—F. H. Watson, New Orleans, La.

Toxaemia in Pregnancy—Chas. Wheelan, Birmingham, Ala.

Some Observations on the Nature and Treatment of Neurasthenia—S. C. Rucker, Memphis, Tenn.

Treatment of Neurasthenia—E. M. Hummel, New Orleans, La.

Some Notes on Pellagra and Pellagrous with Report of Cases—J. H. Randolph, Chattahoochee, Fla.

Treatment of Cropous Pneumonia—Hardee Johnston, Birmingham, Alabama.

Diagnosis of Pernicious Anemia with Special Reference to Cases Occurring in the Young—Cabot Lull, Birmingham, Ala.

Subject Unannounced—J. U. Peters, Birmingham, Ala.

Louisiana System of Hygienic Education—Fred J. Mayer, New Orleans, La.

Neurasthenia—H. M. Folkes, Biloxi, Miss.

Retinal Changes in Lesions of the Blood Vessels and Kidney—H. H. Martin, Savannah, Ga.

The Necessity of Pure Food and Drug Regulations and the Education of the people in the Prevention of Disease—D. Harvey Dillion, New Orleans, La.

SYMPOSIUM ON MALARIA.

The Etiology of Malaria—Bryce W. Fontaine, Memphis, Tenn.

The Pathology and Diagnosis of Malaria—William Krauss, Memphis, Tennessee.

The Prophylaxis of Malaria—W. S. Thayer, Baltimore, Md.

The Treatment of Malaria—J. A. Witherspoon, Nashville, Tenn.

A Study of Malaria—B. B. Sims, Talladega, Ala.

Alimentary Intoxication in Children—J. B. Letcher, Shorter, Ala.

The Relationship of the Modern Educational Methods to the Physical Development of Young Women—D. L. Wilkinson, Montevallo, Ala.

Pellagra—H. F. Harris, Atlanta, Ga.

The Physio-Pathological Aspect of Morphine Addiction—J. L. Bowman, Union Springs, Ala.

Toxic Arthritis of the Hip Joint in Children; Its Differential Diagnosis from Tubercular Diseases of the Joint; Treatment—Michael Hoke, Atlanta, Ga.

Puerperal Eclampsia—R. R. Ratliff, Lucedale, Miss.

Some Experience with Sodium Chloridic—P. M. Lightfoot, Shorter, Alabama.

SYMPOSIUM ON INTESTINAL PARASITES.

A Discussion of the Intestinal Parasites Found in the Southern States—Ch. Wardell Stiles, Washington, D. C.

Strandyloides Intestinalalis, or Cochin China Diarrhoea—Geo. W. Willett, Milledgeville, Ga.

Uncinariasis in its Relation to Surgery—W. F. Westmoreland, Atlanta, Ga.

Five Years Experience in Treating Hook Worm Disease—H. G. Perry, Greensboro, Ala.

A Resume of the Work on Uncinariasis in the South—C. A. Smith, Atlanta, Ga.

Transfusion of Blood from the Medical View Point—H. P. Cole, Mobile, Ala.

Rhinoglyphus Parasiticus in the Human Body—F. W. Schnauss, Cecil, Ga.

Subject Unannounced—F. H. White, Boston.

Amoebic Dysentery—C. M. Franklin, Union Springs, Ala.

Inebriety—E. Forrest Hayden, Nashville, Tenn.

The Diagnosis of Tumors of the Cerebrum—Roy M. Van Wort, New Orleans, La.

The Rheumatic Child—R. F. Monette, Greensboro, Ala.

The Neglected Things in the Child's Development—M. McH. Hull, Atlanta, Ga.

Minor Epilepsy or Hydrosis in Medicine—Wesley Taylor, Atlanta, Georgia.

Tuberculosis—George Brown, Atlanta, Ga.

Endocarditis—W. W. Harper, Selma, Ala.

Diagnosis of Valvular Diseases of the Heart—N. E. Sellars, Mobile, Alabama.

The Etiology and Prophylaxis of Yellow Fever—J. H. White, New Orleans, La.

The Symptoms and Diagnosis of Yellow Fever—C. A. Mohrr, Mobile, Ala.

SYMPOSIUM ON HEALTH CONDITIONS OF THE NEGRO.

Tuberculosis Among the Negro—Ex-Gov. W. J. Northern, Atlanta, Georgia.

Health Conditions of the Negro in the Yazoo-Mississippi Delta with Special Reference to Tuberculosis—H. L. Sutherland, Rosedale, Miss. (Discussion opened by Ex-Gov. R. M. Cunningham, Ensley, Ala.)

Subject Unannounced—L. E. Broughton, Andalusia, Ala.

Subject Unannounced—T. D. Coleman, Augusta, Ga.

Subject Unannounced—J. J. Peters, Mobile, Ala.

Prophylaxis of Syphilis—W. H. Oates, Mobile, Ala.

The Diagnosis and Treatment of the Serious Complications of Typhoid Fever—C. W. Strickland, Atlanta, Ga.

The Use of Aspirin in the Treatment of 123 Cases of Typhoid Fever—E. O. Boeckh, Atlanta, Ga.

Tincture Veratrum Viride—J. S. Todd, Atlanta, Ga.

Bacteriology of Meat Poisoning—R. G. Owen, Atlanta, Ga.

Protection as a Therapeutic Principle—I. I. Lemann, New Orleans, Louisiana.

Subject Unannounced—R. T. Taylor, Baltimore, Md.

Typhoid Fever, The Treatment—J. B. Murfree, Murfreesboro, Tenn.

SECTION ON OPHTHALMOLOGY.

J. T. Herron, Chairman,

Jackson, Tenn.

A. B. Harris, Secretary,

Birmingham, Ala.

Subject Unannounced—H. H. Martin, Savannah, Ga.

Report of Two Cases of Pharyngeal Tumors, with Carotid Ligation in One—E. P. Calhoun, Atlanta, Ga.

What is the Maximum Dose of Iodide of Potash in Virulent and Fulminating Forms of Syphilis? Especially in the Iris but also on the Mucous Membrane?—A. G. Hobbs, Atlanta, Ga.

Antointoxication as It Affects the Eye—W. Grace Harrison, Birmingham, Ala.

Prolonged Photophobia Following Traumations of the Eye—S. L. Ledbetter, Birmingham, Ala.

Adenoids in Young Adults—Carl Fox, Birmingham, Ala.

Subject Unannounced—L. G. Woodson, Birmingham, Ala.

Report of Injury to Frontal Sinus Through the Orbital Cavity and Operations for Same—H. M. Lockey, Atlanta, Ga.

The Therapeutics of the Naso-Pharynx—S. Kirkpatrick, Selma, Ala.

Some Cases of Optic Neuritis—A. W. Stirling, Atlanta, Ga.

Some Clinical Observations Upon Sympathetic Ophthalmites—Dunbar Roy, Atlanta, Ga.

The Closure of the Tear Canal or Canals in Infants, Symptoms and Treatment—J. M. Crawford, Atlanta, Ga.

Sudden Blindness—C. C. Stockard, Atlanta, Ga.

Mules Operation—L. Webster Fox, Philadelphia, Pa.

Demonstration and Use of the Phorometer, Glycophorometer and Muscle Indicator—G. C. Savage, Nashville, Tenn.

The Endo-Laryngeal Removal of Papillomata of the Larynx—Richmond McKinnie, Memphis, Tenn.

Health Operation for Mastoid Diseases—E. C. Ellett, Memphis, Tenn.

Episcleritis and Its Treatment—G. H. Price, Nashville, Tenn.

The Singing Voice—A. B. Dancy, Jackson, Tenn.

PHYSICIANS ATTENTION!

Drug stores for sale on easy terms, etc., United States, Mexico and Canada. Drug store position. F. V. Kniest, Omaha, Nebraska.

NOTICE TO DOCTORS.

For Sale—A Wagner Four-plate Static Machine.

Guaranteed to be in *first-class* condition in every respect; no tarnish about it, as it has been handled carefully and given systematic attention. Get as good or better results from its use than when it was new.

Reason for selling is to get out of therapeutic x-ray work and do only surgical x-ray work. Have been in it ten years and developed an x-ray dermatitis and must quit. For price and other particulars, address or call on

J. R. Goodloe, M. D., Demopolis, Ala.

Personal Notes.

Dr. J. L. Batson, of Gurnee, was in the city on business on the 8th inst.

Dr. S. C. Strock, of Acton, Ala., was a visitor in Birmingham on the 2nd inst.

Dr. J. M. Donald, of Marion Junction, Ala., was visiting friends in Birmingham recently.

Dr. John Edmonson, of this city, is spending the month in Philadelphia doing post-graduate work.

Dr. N. T. Underwood, of Russellville, was in the city a few days ago and paid the Journal office a pleasant call.

Dr. James S. McLester, of this city, has returned from a year's stay in Berlin and Vienna and other European cities.

Drs. J. I. Reid, of Aldrich, E. G. Givahn, of Montgomery, and W. D. Sellers, of Anniston, were recent visitors in Birmingham.

Dr. P. G. Dunlap, of Lawton, Okla., formerly of Adger, Ala., spent the past two weeks on business and visiting friends in Birmingham and vicinity.

Dr. H. C. Morland, of North Birmingham, and Miss Ethel May Cowan, of Woodlawn, were married Wednesday evening, October 7, at the home of the bride.

Dr. W. J. Butler, of Chicago, Ill., will visit Birmingham in November, and on the 6th will read a paper at a joint meeting of the Jefferson County Medical Society and the Birmingham Medical Library Association on "The Serum Diagnosis of Syphilis."

Dr. Robert A. Burns, of Alabama City, and Miss Jeffie D. Bell, of Shelby county, were married in this city at the Florence Hotel on the 20th inst.

The many friends of Dr. L. G. McCollum, of this city, are glad to learn that he is recovering from a serious gall-bladder operation. He is still at the St. Vincent's Hospital, but we hope to see him out at an early date.

Among those attending the Tuberculosis Congress in Washington from this State were: Dr. D. L. Wilkinson, Montevallo; Dr. W. A. Burns, Dr. R. B. Harkness and Dr. H. T. Heflin, Birmingham; Dr. A. J. Stovall, Jasper; Dr. J. N. Odom, Oakman; Dr. C. B. Jackson, Dora; Jno. P. Stewart, Attalla, and Dr. R. M. Cunningham, Ensley.

Dr. J. L. Williamson, of Coeanor, Ala., is, we are glad to say, rapidly recovering from a severe attack of appendicitis, for which he was operated on at the St. Vincent's Hospital, of this city, a few days ago.

The many friends of Dr. J. F. Alexander, of West Blocton, Ala., sympathize with him in the serious accident which happened to him on September 27. While attending church on the above date the pastor requested his assistance in making some chemical experiments illustrating a sermon which was being delivered to the children. The glass retort used exploded and pieces of the glass penetrated the eyeball, rendering enucleation necessary.

Miscellaneous Notes.

GOUTY PAINS IN THE ARTICULATIONS.

R	Betul-Ol			3ss
	Chloral Hydrate			3ss
	Menthol			3ij
	Tinct. Opii			3ss
	M. ft. Lin.			

Sig: Apply with a camel's hair brush, cover with some impermeable material and wrap in cotton wool.

Bynecologic curettage (except for diagnosis) is an irrational, unnecessary, harmful operation. Obstetrical curettage differs entirely in effects.—*Byron Robinson.*

MEASLES.

By Burton Bohannon, M. D.

Since the beginning of the winter months, about December 1st up until the present time, I have treated over seventy cases of measles in the hospital. Out of this number about thirty per cent. manifested severe catarrhal conditions while probably ten per cent. were malignant conditions. Out of the total number of cases the percentage of deaths was about four per cent., and this four per cent. represented those cases of strumous diathesis or severe glandular conditions followed by malignancy.

Measles as a rule, under proper hygienic surroundings and without complications, is a condition not to be feared by the medical profession or even by the laity, but when accompanied by severe catarrhal manifestations or glandular affection or followed by some lung or bowel trouble it is no longer a simple condition but one which needs immediate attention.

Speaking of local treatment, I find that Glyco-Thymoline and water, equal parts of each, or occasionally one part Glyco-Thymoline to two parts water used as a spray for mouth, throat and nose is very beneficial, not in the same manner as peroxide of hydrogen, but as a healer of mucous membranes. If the catarrhal conditions extend down into the bowels, I either use Glyco-Thymoline internally or in enema and have found it excellent. I attribute a great deal of my success in these seventy cases of measles to the free and liberal use of Glyco-Thymoline. Its pleasant taste and special adaptation to mucous membranes and inflammatory surfaces, should find it a permanent home in every hospital.

St. Louis Children's Hospital,

SEXUAL DEPRAVITY OFTEN DUE TO THE DISEASED
PROSTATE.

As shown by the fact that many cases of morbid condition of the prostate would be recited in which by the use of sanmetto the prostate was equalized, the irritation and difficult micturition removed and the sexual instinct normalized. And it may be said that in prostatic hypertrophy it is always better to give sanmetto a fair trial before resorting to the knife, the results of which are accompanied with doubt and danger.

THE NEUTRALIZATION OF DYSCRASIA.

In a very excellent article on "Various Forms of Headache" which appeared in "Medical Progress" a short time ago, Dr. J. U. Ray of Blocton, Ala., states that "We must not only be particular to give a remedy intended to counteract the cause which produces headache, but we must also give an anodyne which will relieve the pain until the constitutional dyscrasia to which this trouble is due, has been neutralized. To answer this purpose, two antikamnia tablets will be found a safe and convenient remedy. Usually they relieve the pain within twenty minutes. When we have a patient subject to sick headaches, we should caution him to keep his bowels regular, and when he feels the first premonition of an attack, he should take two antikamnia tablets. Most all patients tell us they know by certain symptoms when an attack is about to come. To these patients we can do nothing better than give them antikamnia tablets to be carried around with them ready for use. They are prompt in action, and can be depended upon to produce the most soothing anodyne action. In this country and also in England these tablets are largely employed, with results that have caused them to be depended upon by the best observers in both countries. The remedy, having none of the drawbacks common to other agents of this class, it is eminently fitted to be applied in the treatment of the cases just described."

ASSURED THERAPEUTIC RESULTS.

Assured therapeutic results can only follow the administration of active remedies. Extemporaneously prepared preparations, in lieu of time tried and clinically proven products especially where dependence

must be placed upon crude drugs of uncertain strength due to improper selection or deterioration from age, has resulted in dissatisfaction to the physician and disappointment to the patient, who has a just right to expect benefits as a result of the remedy prescribed.

For twenty-six years Hayden's Viburnum Compound has remained standard both as to quantity and quality of its component parts as well as to the uniformly satisfactory results following its administration.

Hayden's Viburnum Compound is prepared with that care, both as to the selection of drugs and in the proper combining, to make it a perfect and dependable product which is impossible where a substitute formula is extemporaneously prepared from the stock and with the limited facilities of the average drug store.

If in the next case of Dysmenorrhea, you will at least give Hayden's Viburnum Compound a trial, administering it a few days prior and during the menstrual period, we are confident that your patient will experience the same beneficial result as has been the case during the many years Hayden's Viburnum Compound has been before the profession.

In Amenorrhea, Menorrhagia and Metrorrhagia, Hayden's Viburnum Compound has proven of unquestionable value and as its reputation has been built up and maintained solely upon its merits as a reliable remedy in the treatment of diseases of women, we are confident that if you will use it in your next case, you will be as well satisfied, as have been those who have for years placed their dependence upon it. Owing to the popularity of Hayden's Viburnum Compound and its large sale, it is extensively imitated by other manufacturers. To assure satisfactory beneficial results, the original H. V. C. should only be administered. We would be glad to send samples and literature upon request. New York Pharmaceutical Co., Bedford Springs, Bedford Mass.

The rate of infant mortality is one of the best tests of civilization.
—*Byron Robinson.*

Many cases of dysmenorrhea are a pure neurosis, the accompanying section being only a coincidence, and gynecologists must extend their observations beyond the pelvis if they discover the true etiology of many symptoms which manifest themselves most prominently it may be in the pelvis.—*Dr. Lucy Waite.*